The RUBBER AGE

Table of Contents

Vol. 31 **MAY 10, 1932** **No. 3**

FEATURES AND DEPARTMENTS

Late News of the Industry 101
Modern Compounding Room Practice 104
Developments in the British Industry in 1931 107
Czechoslovakian Rubber Industry 109
Editorial Comment 111
Current News of the Industry 112
Items About Well-Known Rubber Men 115
Rubber News Around the World 116

MARKETS AND STATISTICS

Crude, Scrap and Reclaimed Rubber 118
Cotton and Fabrics 118
Chemicals and Compounding Materials 119
MARKET PLACE 125
ADVERTISING INDEX 129

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VOL. 31, NO. 2 MAY 10, 1932

LATE NEWS of the Industry

Senate Proposes 5 Cents Per Pound Duty to Crude Rubber in Tax Bill

IN consideration of the new federal tax bill, the Senate Finance Committee is giving serious thought to the imposition of a 5 cents per pound import duty on crude rubber. It is estimated that such a tax would yield $50,000,000 to the government. Sentiment in the rubber industry and crude rubber trading circles is divided on the efficacy of such a tax at this time, although it is agreed that manufacturers holding large stocks of crude rubber will profit by the increased inventory values which would result. The Rubber Manufacturers' Association refuses to make any statement on the part of the industry, on the proposed measure until all details of the tax are available. It may then ask for a hearing on the proposition.

The reaction of the rubber trade to the Senate suggestion was one of complete surprise, particularly in view of the opposition voiced by the Administration to foreign export restrictions and export taxes on commodities.

Michelin Demonstrates His Rail Car in Test Runs Around Akron

DURING the last two weeks J. Hauvette Michelin, the inventor of the new rail car tired with rubber wheels, has been conducting a series of test runs around the vicinity of Akron, O., and demonstrating to groups of railroad men the practicability of this new vehicle. The Budd Manufacturing Company, Philadelphia, Pa., is now constructing a new type of the cars, while the Goodyear Tire and Rubber Company are manufacturing the rubber tires for the wheels.

In addition to its comfortable riding qualities the operating cost of the light pneumatic tired vehicles is said to be much smaller than that of heavy trains while the wear and tear on roadbeds is expected to be reduced 25 to 50 per cent.

Capacity of the coach is 35 passengers. It has the appearance of an elongated bus and is equipped inside similarly to busses. It can make a speed of 90 miles an hour, but would ordinarily be operated between 60 and 65 miles an hour. It can be braked to a stop within 100 yards.

Mr. Michelin estimated that the operating cost of the 30-passenger coach, exclusive of the item for man power, is 16 cents a mile.

The car weighs only 11,000 pounds making the per passenger weight about 1-12 as much as that of the ordinary steam train. Safety bands are provided in the tires. Upon these the coach can ride without noticeable difficulty for many miles after a blowout.

In 60,000 miles of operation on French railroads only one blowout has occurred, Mr. Michelin claims. About a dozen of the coaches are now doing feeder service on French railroads and more will be utilized in the near future.

Executives from the lines making up the extensive Van Sweringen railroad system were guests on a ride in the coach from Cleveland to Akron.

P. W. Litchfield, president of the Goodyear Tire & Rubber Company, also made the trip. Others in the group were: J. J. Bernet, president, and F. M. Whitaker, vice-president of the Chesapeake & Ohio Railroad; Charles L. Bradley, chairman of the board, C. E. Denney, president, and D. L. Gray and R. M. Woodruff, vice-presidents, of the Erie Railroad; W. L. Ross, president, A. R. Ayers, general manager, and George S. Ross, J. A. Day and J. J. Klein, vice-presidents of the Nickel Plate Railroad, and G. A. Tomlinson of the Tomlinson Steamship Lines.

General Tire Company Passes Dividend on Its Common Stock

DECISION to pass the April quarterly dividend of 25 cents a share on the General Tire & Rubber Co. common was announced April 23, by William O'Neil, president, upon his return from New York.

"In view of present economic conditions the directors believe it better judgment to defer action on common stock

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Scanning the Headlines

Advance in tire prices urged by U. S. Rubber official as a boon to trade . . . . GENERAL passes common dividend, but expects to renew payments shortly . . . . Chicago Rubber Group will hear paper on latex cements, May 13 . . . . U. S. RUBBER steps up tire production 15 per cent . . . . Senate proposal for 5 cent import duty per pound on crude rubber arouses divided comment within trading circles . . . . Michelin demonstrates his rubber-tired rail car around Akron . . . . O'Neil testifies before the Hofstadter Committee on a New York City bus deal.

dividend for the present, along with other major corporations which have taken similar action," a statement by Mr. O'Neil said.

"We already have paid a common dividend this year, which maintains our record for paying a dividend every year since we have been in business."

Mr. O'Neil said that early resumption of the dividend was anticipated, declaring that the company's business has shown a definite sales increase in the current month.

Advance in Tire Prices Is Urged By U. S. Rubber Co. Executive

ADVOCATING rather than predicting, J. F. O'Shaughnessy, general manager of the tire department of the United States Rubber Company, recently declared that an increase in price was the tonic most needed by the tire industry.

"An advance in tire prices should be made immediately," Mr. O'Shaughnessy said. "One look at the balance sheet of the industry is enough to indicate that. The best way to change the red ink into black is to raise prices to the point where a fair profit can be made.

"In the last few years tire mileage has been multiplied five times. This is a laudable development. But during this same period tire prices have been divided six times. The result is that prices today are at sub-basement level. They are so low that profit has vanished.

"Unless a business makes a reasonable profit, it has no good reason for existence. It affords little help to the people it employs, and it certainly is not an asset to the country. What this country needs today is many businesses making money. We people of the tire industry should see to it that we contribute to better times by operating at a profit."

An increase not only in tire prices but also in all commodities must be made, Mr. O'Shaughnessy said, before the economic situation in this country returns to normal.

"Manufacturers have liquidated their businesses," Mr. O'Shaughnessy said. "They have reduced overhead. They have scaled down their inventory. They have readjusted salaries and wages. But with all this, they can't expect to conduct their business on a profitable basis with commodity prices at their lowest level. The prices must come up."

Mr. O'Shaughnessy has just returned from one of his semi-annual trips to the Los Angeles plant of the United States Rubber Company. Enroute he visited many of the company's branches and dealers.

O'Neil Testifies Before Hofstadter Committee on New York City Bus Deal

WILLIAM O'NEIL, president of the General Tire and Rubber Company, was recently a star witness before the Hofstadter Committee, now investigating civic conditions in New York City, in connection with the negotiations by the Equitable Coach Company, to secure a monopoly of the city bus facilities in and about New York.

In an endeavor to consummate an advantageous business deal for his company, he testified that he had been the victime of political chicanery.

In the course of his testimony it was revealed that State Senator Hastings, against whom the immediate proceedings were directed, had been on the payroll of the General Tire and Rubber Company for some time, in return for what had been considered his political influence in securing a favorable contract for the Equitable Coach Company, whereby the General Tire and Rubber Company would incidentally profit to the extent of $500,000 on tire sales.

Mr. O'Neil testified that his total contribution toward the promotion of the Equitable franchise was $67,979.03. These contributions, he said, were charged against sales cost of the General Tire and Rubber Company.

It also developed from Mr. O'Neil's testimony that Senator Hastings was receiving from $2,000 to $2,500 a month in salaries from the backers of the Equitable for a year from August, 1927, to August, 1928. Mr. O'Neil testified that he placed Hastings on the pay roll of the General Tire and Rubber Company in August, 1927, after the funds of the Equitable had given out and the Senator could no longer be paid the $1,000 a month salary which he had received from that company since September 1, 1925.

Mr. O'Neil testified that Hastings drew a total of $21,500 in salary from the General Tire and Rubber Company. His pay from August, 1927, to July, 1928, was $1,000 a month and from July to January 31, 1929, $1,500 a month.

Senator Hastings on December 22, 1928, borrowed $5,000 from him, Mr. O'Neil said, with a promise to pay it back in ten or fifteen days. The Senator told him he was in debt and needed money to buy his wife's Christmas present, adding that he had money coming to him and would repay the loan in a few days.

"Has that $5,000 loan, as you call it, been repaid?" asked Mr. Seabury, the counsel for the committee.

"No, not yet," said Mr. O'Neil.

Mr. O'Neil said that when he gave his first contribution of $40,000 to the "trustee fund" set up by the Equitable backers he believed that a franchise for the Equitable was a certainty and that his company would sell the bus company $500,000 worth of tires in a year. The "trustee fund" was established in November, 1925, and was placed in the hands of J. Allan Smith, New York representative of the Fageol Motors Company.

The "trustee fund," amounting to $282,000 was taken out of the custody of Smith because he "was making foolish expenditures in entertaining" Senator Hastings, the witness related.

"We were already paying Senator Hastings $1,000 a month salary and we did not see why he should also be entertained," said Mr. O'Neil. "Our money was disappearing faster than we liked to see it."

Mr. O'Neil said that both he and Charles B. Rose, another Equitable sponsor and vice-president of the Fageol Motors Company, were dissatisfied with Smith's expenditures.

Verdict Awarded Goodrich in Suit For $250,000 on Old Miller Contract

FEDERAL Judge Samuel H. West, in Cleveland, O., recently directed a verdict in favor of the B. F. Goodrich company in a $250,000 breach of contract suit brought against it by the United States Tires Stores Corporation.

The court held that it had been shown in the testimony that the plaintiff had itself broken the contract in one particular.

The dispute involved a five-year agreement entered into by United with the old Miller Rubber company, which was purchased by Goodrich. The plaintiff attempted to show through testimony of a dozen member dealers that after Goodrich took over the contract tire orders were delayed, came in wrong or did not come at all.

United sought to prove that Miller had taken the contract on a narrow profit margin and that Goodrich found it too close and tried to squeeze out of it. Goodrich contended that United had broken the contract itself when its members failed to order as many tires as called for.

Firestone Employes Pledge to Buy Autos In Campaign to Aid Business Revival

AN interesting test campaign to revive general prosperity has been concluded at the Firestone Tire and Rubber Company, Akron, O. The plan, which is sponsored by a Cleveland group, headed by Carl W. Blossom, contemplates a nationwide drive for the sale of an extra million American automobiles in 1932.

Automobile manufacturers, it was stated, are in no way sponsoring this campaign, but it was pointed out that the automobile industry is the key to business improvement, since its ramifications reach out into nearly every line of business. Consequently if an extra million automobiles can be sold this year their orders will stimulate prosperity in manufacturing, agriculture and transportation.

The automobile industry consumes over 15 per cent of all steel produced—53 per cent of all malleable iron—over 68 per cent of all plate glass—over 18 per cent of all hardwood lumber—over 14 per cent of all cotton—26 per cent of all lead—30 per cent of all nickel—and almost 83 per cent of all rubber—to say nothing of paying the railroads hundreds of millions of dollars a year for carrying thousands of carloads of freight.

It was made clear to all Firestone employees who were informed of the plan that the only purpose is to show to individuals throughout the nation the immense good that can come from a large scale automobile purchase movement. The slips to be signed by those interested in buying a car "before July 1 provided a million others in the United States agree to do so" was merely a frank admission that the individual intends to buy a new car, and is willing to help a good cause by buying it during the proposed campaign.

The results were extremely encouraging for business, indicating that more than 40 per cent of those in pivotal positions in the factory and general offices are ready and willing to buy a car in 1932.

U. S. Rubber Advances Output 15 Per Cent on Five-Day Week

BEGINNING May 2nd, the tire department of the United States Rubber Company increased operations to five days a week, with three eight-hour shifts a day. The department had been working an average of four days a week.

The May production schedule calls for a 15 per cent increase in tires, according to J. F. O'Shaughnessy, general manager of the tire department. This increased schedule will mean many more hours of work for the employees now on the payroll, and it will necessitate the recall of a few former employees.

"At the rate orders are now coming in from both car manufacturers and tire dealers, I believe June output will surpass that of May by another 15 per cent," said Mr. O'Shaughnessy, "and I see no reason why we should not continue at even a higher rate throughout July."

Mr. O'Shaughnessy said that approximately 3,000 men were at work at present and that this was close to a normal payroll. He explained that it is the policy of the company to shorten hours rather than dismiss men, and for that reason the increased operations would not mean the recall of many workers, simply because there are not many who have been laid off.

Indication of the demand for the new low pressure tire which the company is now building is reflected in the fact that men in that department are working seven days a week.

Chicago Rubber Group, A. C. S., to Hear Paper on Latex Cements, May 13

THE annual meeting of the Chicago Group Rubber Division, A. C. S., will be held Friday evening, May 13, in the College Inn of the Hotel Sherman. Dinner will be served at 6.45 P. M. to the accompaniment of "Coon Sanders Original Night-Hawks." Members will be afforded the opportunity of seeing the complete stage show and ample accommodations have been made to take care of all who wish to come.

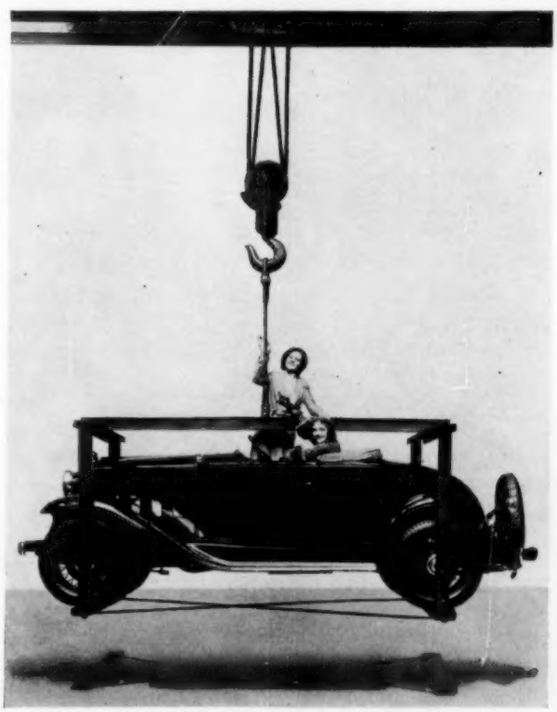
After the usual excellent dinner, members will adjourn to the meeting room where they will hear Wm. Moore of the Rubber Service Laboratories on the subject of "Some New Developments in Latex Cements."

The information contained in Mr. Moore's talk has not yet been published in any of the chemical or rubber journals. The members will have an opportunity to receive some valuable information from this capable chemist.

The annual election of officers of the Group for the ensuing year will be held after the presentation of Mr. Moore's paper. The nomination's committee have submitted the following candidates for election: U. H. Parker, chairman; S. Collier, vice-chairman and B. W. Lewis, secretary-treasurer. The proposed executive committee include C. E. Frick, J. Kirschner, E. Horan, H. B. Underwood and O. Urech.

Reservations for the dinner at $1.50 per plate can be made through B. W. Lewis, the present secretary, c/o Wishnick-Tumpeer, Inc., 365 E. Illinois Street, Chicago, Ill.

A New Way to Hook a Ride



Suspended by a piece of Tempered Rubber only a fraction of an inch thick, Mavis Hansen and Margee Tolle go for an unusual ride in a new Chevrolet. Tempered Rubber is a secret new tread compound used exclusively in United States tires. Its toughness is depicted here as the small strand holds a load of 3,000 pounds

(Other news of the industry will be found on Pages 112-117)

D. C. Maddy

Modern Compounding Room Practice

Functions of Compound Room—Classifications of Stocks—Preparation for Mixing—Weighing—Types of Scales Required—Use of Banbury Mixers

By D. C. Maddy

Chemical Engineer, B. F. Goodrich Co., Akron, Ohio

ADVANCES in the technology of the development of rubber compounds and the resultant increased use of rubber products have not only required the adoption of mass production methods by the rubber industry but are constantly demanding greater accuracy and uniformity. The work of well trained technical organizations in investigating and improving the practices and procedures of milling, calendering, and compounding is essential to meet the demands made by the development groups.

The quality of rubber products is so dependent upon the accuracy of weighing that, without a compound room organization adequately trained and properly equipped to perform its functions, the work of the finest technical organizations and the use of the most refined and exact methods of mixing, calendering, and curing would be seriously handicapped.

A rubber compound is known as a "stock" from the time the materials are proportioned and weighed until it appears as a finished article. The exact amount of each raw material required for a batch of stock is listed in a recipe similar to the one shown below:

Stock No. 147826 GRAY INNER TUBES	*Batch weight* *Pounds*	200 *pounds* *Ounces*
Smoked sheet rubber	57	11
Pale Crepe rubber	57	11
Accelerator master batch	20	0
Zinc oxide	6	11
P-33 black	53	5
Sulfur	3	0
Stearic Acid	1	10
	200	0

The use of the full name or a trade name for each of the raw materials is very cumbersome and would lead to considerable confusion. Accordingly a code number is assigned to each different raw material by which it is known throughout the plant. Many of the materials are used in several forms each of which imparts different physical properties to rubber stocks, even though they may have the same basic chemical composition. For purposes of controlling the final qualities imparted to the stock each of the various forms is regarded as a distinct material and is given its own code number. Thus, there may be one code number for channel gas black, another for Gastex, and still another for P-33 black, since none of these forms of black imparts exactly the same physical characteristics to a rubber stock.

In the early days of the rubber industry, codes were used for the purpose of secrecy, and were known only to the most tried and trusted employees. Recipes were written in symbols or hieroglyphics for the same purpose. Raw material codes have grown up with the industry and are now used primarily for speed and efficiency.

Function of the Compound Room

When a certain quantity of stock is needed, an order is first issued calling for the required weight. This order is then calculated to the number of batches required and is forwarded to the compound room with a summary of the order and a batch identification ticket for each batch ordered.

It is then the function of the compound room to have weighed, in accordance with the recipe, as many portions of each material, with the exception of oils, as there are batches ordered. One portion of each material is placed

Fig. 1—Pigment Sifting Unit

in a batch box to which is attached the identification ticket showing the kind and amount of each oil required for the batch. Should the batch require no oil this fact is indicated. When all of the portions for one batch have been placed in each box, the batch is ready for delivery to the mixing mills.

An oil room attached to the mixing departments supplies the mill men or the Banbury operators with the required oils at the time a batch is mixed in accordance with instructions shown on the batch identification ticket. It is necessary to heat the viscous oils to facilitate handling. By having an oil room adjoining the mill room it is possible to supply an oil at approximately the same temperature for any batch.

The men who weigh the materials for batches are called compounders. The use of the term, compounder, in this respect is confusing because it is also applied to the technically trained man who develops the recipes. It would be more accurate to call the former a "weighman." The technically trained man develops compositions of rubber and other materials to produce stocks which will meet certain conditions of service.

Classification of Stocks

The compound room of a large rubber factory is called upon to handle a large number of different types of stocks. These stocks have been roughly classified into the following groups depending upon the raw material which

Fig. 2—Rubber Storage

is present in the largest amount and upon the characteristic property of the stock:

A. Rubber Batches.
   1. High grade color batches such as hot water bottles, and light solings.
   2. Inner tube stocks.
   3. Band stocks.
   4. Tire coats and frictions.

B. High Gravity Stocks.
   1. White sidewall stocks.
   2. Solid Tire stocks.

C. Gas Black Stocks.
   1. Tread stocks.
   2. Solings.

D. Reclaim Stocks.

In considering reclaim stocks, the wide use of varying percentages of this material in rubber compounds makes classification difficult. Strictly speaking, any stock containing reclaim might be called a reclaim stock. The ratio of reclaim to rubber in any given stock is a better criterion. When reclaim becomes the dominant factor in the processing of the stock, such a compound may rightly be considered a reclaim stock. The critical value of this ratio may differ with the type of stock and with the reclaim used.

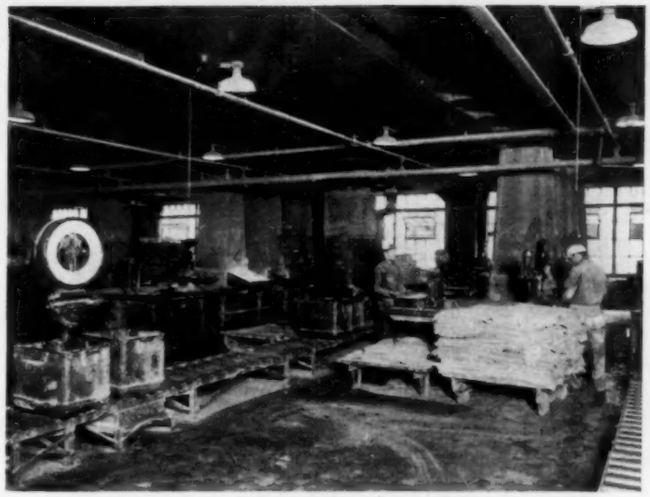


Fig. 3—Preparing Batches for Mill Mixing

Compound room procedure will be dealt with from the standpoint of the preparation of batches prepared for mill mixing and for Banbury mixing. The oldest mixing machine used in the rubber industry is a roll mill. Batch weights may vary from 25 pounds for a 40 inch mill to 350 pounds for an 84 inch mill. No. 27 Banburys are used primarily for mixing stocks which are required in large amounts such as tire coats and frictions and gas black master batches. The No. 9 and No. 11 machines are generally used for mixing a variety of stocks none of which is required in large volume.

Preparation for Mill Mixing

Accuracy is paramount in the preparation of batches for mixing, for a very small error in any one ingredient results in the loss of a large amount of material and labor. If an error in any ingredient is not detected before the batch is mixed, then all of the other material in the batch is rendered unfit for the purpose intended and also the labor of carrying out the weighing and mixing is lost. For this reason weighing by addition is objectionable because the batch cannot be truly check weighed. The final weight would always be the total called for by the recipe and the correct proportioning of the ingredients could not be confirmed by any simple means. It follows that a batch of stock should be built up from separately weighed portions of the required materials. Such a batch can be properly checked by weighing the completed batch and if an error is found it can be promptly corrected.

Materials of all kinds should be furnished to the weighman in as convenient a manner as possible. Pigments such as sulfur, clays, whitings, and zinc oxides may be supplied through bins similar to those shown in Figure 3, or in boxes or cans of sufficient capacity. Since pigments are usually placed in the batch box first, temporary storage space should be located so as to fit into the order of weighing. Materials such as rubber, reclaim, accelerator and other master batches are best supplied in slab or roll form on skids or racks as they are needed. A system whereby materials are trucked to the compound tables by a supply man permits the weighman to perform his work without the interruptions which would occur were he to obtain them himself.

In putting up an order, the weighman first places a number of batch boxes on a roller conveyor. Two sizes of

boxes have been found to satisfy the requirements of most batches. The "200 pound" capacity box is 1½′ x 1½′ x 2′ and built to weigh 48 pounds. The "300 pound" capacity can is 2′ in diameter and 2′ high and is built to weigh 62 pounds.

After placing the boxes on the conveyor, the weighman weighs the correct amount of each material called for by the recipe. The scales used for this work vary in capacity from 5 pounds to 250 pounds with the automatic type predominating. Dial scales, which indicate the weight of the material on a large dial, or the type of beam scale with an "over and under" indicating pointer have practically replaced the older, non-indicating type of beam scale. These newer scales are faster and undoubtedly more accurate than the old type. With the dial scale no setting of weights is necessary and the weight is read directly from the dial. These scales are best for weighing a large number of different sized portions of materials. With the indicator type of beam scale one setting of the weights is sufficient for an extended series of weighings of the same sized portions.

Type of Scales Required

The size of the portion determines the capacity of the scale on which it is to be weighed. Small additions of color pigments, color master batches or accelerator master batches which require very accurate proportioning are weighed on a small capacity scale, while large portions of pigments or rubber may be weighed with sufficient precision on larger, less accurate scales. It is the percentage of possible error which is of the greatest importance in selecting the proper scale. An actual error of 4 ounces in weighing a one pound portion or a 100 pound portion on a scale of 250 pounds capacity would amount to an error of 25% in the first case and only 0.25% in the second case.

It is unfortunate that recipes in many plants are written in pounds and ounces and that scales are graduated in the same way. The use of tenths of pounds in recipes and like graduations on scales would simplify the work of the technical men and the cost departments without sacrifice of accuracy.

The tops of the tables at which the weighmen work are covered with, or constructed entirely of metal. Such tops are durable, sturdy, and easily kept clean but are objectionable on account of the ease with which the sharp knives necessary for cutting rubber and reclaim are dulled when they strike the metal. This can be prevented by the use of a slab of uncured black master batch on the table top. A slab of uncured white master batch should be used on tables where color sensitive stocks are weighed.

Weighing of Batches

After a batch is completed, it is rolled on to the section of the conveyor which is supported by the weighing platform of a check-scale. Check scales are necessarily of larger capacity than the table scales. The one shown in Figure 3 is a 750 pound capacity, dial type scale.

The check-weighed batch may be placed on any one of several types of skid boards but a board 3½′ x 4′ will conveniently hold four boxes of either type described above, and is easily moved, either to the unmixed batch storage space, or to the mill room, by means of a truck of the transveyor type. Conveyors of various types are used for transportation of batches from the compound room to the mill room. Careful planning is necessary so that the extra conveyor system required does not cause confusion in either room. With gravity conveyors the danger of loss of material from the box may also be a serious objection.

Many of the pigments used in rubber compounds are not sufficiently free from grit and small pieces of foreign material to be satisfactory for use without first being bolted. Figure 1 shows a battery of rotational vibratory sifters, which may supply bolted pigments directly to the bins below or to cans for transportation to other divisions of the compound room. One machine may be used for bolting two or more similar pigments, but much care must be exercised to prevent contamination of one material with another. Employment of the proper order of sifting and thorough inspection and cleaning of the machines when changing from one material to another considerably reduces the danger of contamination.

The various kinds of soft or masticated rubbers are stored on rubber racks. The kind of rubber rack used usually depends upon the type of skid board employed. The racks shown in Figure 2 are constructed from 3½′ x 4′ skids. Three shelves have been added at intervals of 16″ making the overall height of the rack 63″. Such racks will hold 1200-1500 pounds of rubber which is approximately twice the working capacity of a skid board. They are easily loaded, transported and emptied. The efficiency and carrying capacity of this rack can be increased by replacing the three added shelves at 16″ intervals with four shelves at 12″ intervals. Rubber racks will practically eliminate the necessity for storage bins and the double handling which is attendant to their use.

Preparation for Banbury Mixing

Preparation of batches for No. 27 Banbury mixing requires somewhat different methods and equipment from those used for mill mixed batches. The decreased time of the mixing cycle and the larger size of the batches mixed makes necessary a large and convenient raw material storage space. In order to keep the cycle between weighing and mixing as short as possible, the compound unit is located so as to be in close proximity to the operating platforms of the particular Banbury it serves. Banbury units can be successfully designed for direct production in series from raw materials to mixed stock, and even to calendered or tubed stock. To meet these conditions, larger batch boxes and different methods of handling them are required. A combination of roller and belt conveyors may be used to transport the weighed batches from the compound unit to the Banbury. The Banbury operator may weigh all of the materials for his own batches or the compound room may furnish the correct amount of all but one material common to all batches mixed in a particular unit. This is possible in the case of gas blacks which are supplied in sacks of convenient size containing a definite weight. In such event the mixing instruction card specifies the number of sacks which must be added to complete a batch.

A convenient size of batch box for use in connection with a conveyor system is 24″ wide by 20″ high, 36″ long at the top and 23″ long at the bottom. The back is perpendicular to the bottom but the front end is on a slant. This provides a slide which permits the contents to slip out easily on to the hopper door of the Banbury when the box is tilted forward. A box of these dimensions will conveniently hold 220 pounds of rubber, or reclaim, or 125 pounds of gas black. From four to six such boxes are required for a batch to be mixed on a No. 27 machine.

The type and capacity of the table scales used for weighing materials do not differ greatly from those used on the mill units. Since many of the materials are used in large amounts in these batches, it is permissable in some cases to weigh them directly in a batch box. Sulfur, accele-

(Continued on Page 110)

Developments in the BRITISH RUBBER INDUSTRY *in 1931*

Net Profits Show Drop of 40 Per Cent—Approximately 20 Per Cent of Rubber Workers Are Idle—Industry Continues to Expand in Face of Competition—New Duties Expected to Aid

THE United States rubber goods export trade to the United Kingdom will no doubt suffer a reduction of more than $1,500,000 annually because of the recent change in British fiscal policy, which has resulted in a general tariff and the imposition of certain heavy import duties, according to the Department of Commerce. The products chiefly affected are rubberized fabrics and garments, and rubber footwear. American rubber goods shipped to the United Kingdom in 1930 totaled $1,596,639 in value, comprising the following items.

Products	*Quantity*	*Value*
Rubberized fabrics ..... square yards....	560,801	$236,533
Rubber boots ..... do.....	456,508	866,698
Rubber shoes ..... pairs....	636,480	391,993
Rubber heels ..... dozen pairs....	75,727	44,138
Rubber soles ..... do.....	24,117	57,268
Total value		1,596,639

In addition to the foregoing articles, bicycle tires and inner tubes and rubberized garments are also subject to a customs duty of 50 per cent ad valorem upon import into the United Kingdom from a foreign country, but are exempt if imported from and the product of a British country. Because it is extremely unlikely that any country can successfully compete with British manufacturers in the United Kingdom market on these terms, it is probable that such duties will virtually prohibit imports and greatly increase the demand for domestic products. The probable extent of such increased demand is indicated by the following table, showing the imports during 1930.

United Kingdom Imports of Rubber Goods During 1930

Products	*Quantity*	*Value*
Bicycle tires ..... number....	986,826	£89,838
Bicycle inner tubes ..... do.....	1,157,051	47,059
Rubber heels and soles..... pounds....	7,035,840	567,997
Rubber-proofed garments ..... number....	150,931	60,098
Ruberized fabrics ..... square yards....	699,800	62,483
Rubber boots ..... dozen pairs....	175,090	701,234
Rubber shoes, overshoes..... do.....	1,069,372	1,017,492
Total		[1]2,546,201

[1]Equivalent at par, $12,400,000.

Although general economic conditions during 1930 and 1931 adversely affected the United Kingdom rubber goods manufacturing industry, certain other important industries suffered to a much greater extent. Probably the greatest difficulty encountered was the continued fall in prices, not only of raw materials, but also as regards goods already produced for stock. As a result, profits either entirely disappeared or were greatly reduced. Other contributory causes of the unfavorable situation included the difficult competition provided by foreign manufacturers in both the domestic and British export markets, and the continued heavy burden of taxation.

The volume of production, however, was not greatly affected, with the result that employment continued at approximately the same level as in recent preceding years. The most prosperous branch of the industry throughout the two years was undoubtedly that of tire manufacturing.

The value of the total British exports of rubber manufactures during 1931 was £6,450,570 ($31,388,474 at par of exchange), as compared with £8,338,613 ($40,575,691) for 1930, or a decrease of 22.6 per cent. On account of lower unit values, however, the decline in volume was much smaller.

The decrease in the number of tires exported amounted to about 18 per cent, while, according to the British Board of Trade index, the volume decline in exports of all other rubber manufacturers, except machinery belting and rubberized garments, was only 9 per cent.

England Has 163 Rubber Factories

As compared with 1930 the decline in the value of all imports of rubber manufactures into the United Kingdom during 1931 amounted to 13.6 per cent, falling from £4,507,141 ($21,931,748 at par of exchange) to £3,894,206 ($18,949,206). As regards only tires and inner tubes the decline amounted to 27 per cent, or from £434,035 to £1,718,726 to £1,538,099; and all other manufactures of rubber 13 per cent, or from £2,354,380 to £2,040,887.

No less than 163 rubber goods manufacturing plants were to be found in the United Kingdom in 1930, excluding factories producing rubber goods as a minor part of another business, workshops devoted exclusively to the tailoring of rubberized garments, and establishments employing on an average less than 10 persons. These 163 plants were owned and operated by 140 companies.

The total paid capital of 31 of the larger concerns manufacturing rubber goods in the United Kingdom is £20,206,000, and assuming that the average for the remaining 109 smaller companies is about £100,000, the total for the whole industry approximates £30,000,000.

In comparison with the year 1929, the net profits earned by the larger rubber goods manufacturing concerns in 1930 were lower by about 40 per cent, while as regards the total amount paid in dividends, the decline was approximately 75 per cent. Only a very few concerns have re-

ported for the year 1931, but on the basis of these early returns it appears that further substantial decreases have occurred in earnings, and that dividends will almost disappear. On the other hand, certain leaders of the industry predict that in consequence of the new import duties now in force, profits will become more remunerative, and that the general financial position will greatly improve in 1932.

The total average number of persons employed in the rubber goods manufacturing industry of the United Kingdom during the year 1930 was 50,374 as compared to 47,496 in 1924.

Unemployment in England

Unemployment averaged 15 per cent among registered workers in the United Kingdom rubber goods manufacturing industry during 1930, but during the greater part of 1931 the situation was less favorable and approximately 20 to 25 percent were unemployed. As compared with several other important industries, however, the relative number of rubber workers unemployed was much smaller.

A considerable part of the work in the rubber goods industry is paid for at piece rates, for which reason it is difficult to determine actual wages. However, on the basis of full-time employment, the average earnings of all persons employed in the industry are about £2 9s. ($11.91 at par of exchange) per 48-hour week. For adult workers only the figure is about £2 10s. ($12.51), and for adult males in the tire section about £3 11s. ($17.25).

The value of the gross output of rubber goods in the United Kingdom increased from £35,061,000 in 1924 to £47,342,000 in 1930, or 35 per cent, while it is estimated that the increase by volume was more than 50 per cent.

The principal increases by volume in 1930, as compared with 1924, were automobile tire casings, 170 per cent; rubber in sheets and threads, 109 per cent; rubber hose, 63 per cent; machinery belting of rubber or balata, 62½ per cent; inner tubes, 37 per cent; motor cycle casings, 36 per cent; rubber heels and soles, 32 per cent; and bicycle casings, 15 per cent. On the other hand, there was a decline of 57 per cent in the volume output of mechanical rubber goods, and 17 per cent in rubber boots and shoes.

Imports of all crude rubber retained for consumption in the United Kingdom in 1931 amounted to 201,000,000 pounds, as compared with 282,000,000 in 1930, 289,000,000 in 1929, and 27,000,000 pounds in 1924. The quantity available for manufacture in 1931 (that is, net imports, less additions to, or plus reduction in warehouse stocks) was 174,000,000 pounds, 166,000,000 pounds in 1930, 160,000,000 pounds in 1929, and 51,000,000 pounds in 1924.

The textile requirements of the British rubber goods industry, including fabrics and cords for tires, are supplied almost exclusively by manufacturers in the United Kingdom.

The necessary chemicals (including pigments and colors) are supplied in part by domestic concerns, but such products as acetic acid, barytes, carbon and lamp black, litharge, lithopone, sulphur, zinc oxide, benzol and naphtha, are imported, and of the total, as well as of several individual items, the United States is the chief source of supply.

U. S. Rubber Consumption Survey

THE total consumption of rubber in the United States during 1931, as determined by the Rubber Division of the Department of Commerce, with the cooperation of manufacturers, reclaimers, dealers, and others who submitted reports of consumption or year-end stocks, was less than in any year since 1925, both for crude rubber and reclaimed rubber, and the percentage use of reclaimed rubber also was less than for any year since 1925.

U. S. Crude and Reclaimed Rubber Consumption

	Crude Rubber Long Tons	Reclaimed Rubber Long Tons	Per Cent of Reclaim to Crude
1925	388,000	137,000	35.3
1926	366,000	164,500	44.9
1927	373,000	189,500	50.8
1928	437,000	223,000	51.0
1929	467,400	217,000	46.4
1930	376,000	153,500	40.8
1931	350,000	123,000	35.1

Consumption of reclaimed rubber has been better maintained by tire manufacturers than by manufacturers of other lines. While a lower percentage of reclaimed rubber is used in making tires than in other lines except perhaps boots and shoes, the total amount of reclaimed rubber used by tire manufacturers who also make other products is greater than the total amount used by all other manufacturers. The percentage decline in the use of reclaim from 1929 to 1931 was greatest in the case of manufacturers of proofed goods, but from 1930 to 1931 it was greatest in the case of manufacturers of electrical rubber goods. The use of reclaimed rubber has been better maintained by firms operating their own reclaiming plants than by other companies.

The decline in the use of reclaim since 1928 has had the effect of maintaining consumption of crude rubber at a fairly steady annual rate during 1929, 1930, and 1931, in products other than tires.

The stocks of reclaimed rubber held by rubber manufacturers and reclaimers at the end of 1930 were estimated by the Rubber Division as a result of our survey for that year at 22,000 long tons. The consumption during 1931 is estimated above at 123,000 tons. Exports from the United States during the year are officially reported as 6,976 tons. In addition to the stocks at the end of 1931 reported above for rubber manufacturers (10,177 tons), the amount reported by eleven firms engaged in reclaiming, including some manufacturers who also reclaim, was 11,037 tons, and it is estimated that an additional 500 tons was held by reclaimers who did not report, making total year-end stocks of reclaim 21,714 tons. The 1931 production may be calculated from the above at 129,690 long tons, which compares with 157,968 long tons during 1930. The 1931 production of reclaimed rubber, as reported in quarterly reports of the Rubber Manufacturers Association, Inc., was 124,658 long tons, or 96.1 per cent complete, and in their monthly reports was given as 123,190 long tons (95.0 per cent complete). Year-end stocks of reclaimed rubber were reported by the Association in their quarterly report as 15,904 long tons (73.2 per cent complete), and in their monthly report as 15,405 long tons (70.9 per cent complete).

The quantity of rubber reported on hand by thirty importers, dealers, commission agents and brokers at the end of 1931 was 87,433 long tons, which compares with the actually reported total of 62,869 tons a year previous. Every dealer of importance cooperated by filing a report of stocks. The December 1931 monthly report of the Rubber Manufacturers Association gave a corresponding figure of 65,655 tons (75.1 per cent complete).

The quantity of rubber on hand in the United States at the end of 1930 was estimated by the Rubber Division as 201,000 tons, all but about 2,800 tons having been actually reported by manufacturers, importers and dealers.

The officially reported gross imports during 1931 amounted to 501,788 tons, and the reexports to 25,595 tons, leaving net imports of 476,193 tons. Adding this to the 1930 year-end stock gives a total available supply of 677,193 tons for 1931.

Czechoslovakian Rubber Industry

THE Czechoslovak rubber industry has developed rapidly since the establishment of the Republic. Before the War there were only four rubber factories in the territory that is now Czechoslovakia, according to the Department of Commerce. They were: The Prague Rubber Company, Prague-Vysocany; Veritas, Grottau; Matador, Bratislava; and Optimit in Odrau, all of which have increased their capacity and output within recent years. Of the firms established since the war the most important are Kudrnac, Nachod, Hackauf, Hradec Kralove, Haro, Melnik and Victoria in Brno.

In the first years after the war the output of Czechoslovak rubber factories consisted chiefly of technical articles and factory equipment. Later on, output was diversified and today practically all kinds of rubber goods such as tires, tubes, toys, household articles, heels, soles, and surgical and hygienic supplies are produced.

Eighty per cent of the domestic consumption of bicycle tires can now be supplied by local factories. The Matador Company, the only producer of automobile tires in Czechoslovakia, has improved its equipment and increased its capacity within the last year.

The increase in the output of bicycle tires is indicated by the decline in imports, which dropped from 17,000,000 crowns (approximately $510,000) in 1929 to 7,800,000 crowns ($234,000) in 1931, a decline of 9,200,000 crowns ($276,000) or 54 per cent. Czechoslovak imports of bicycle tires are mainly from Germany, France, and Belgium. During the latter part of 1931 the Prague Rubber Company and the Kudrnac Company began the production of a rubber floor covering similar to linoleum but said to wear much better. Tennis balls were also manufactured in Czechoslovakia for the first time during the year. The Czechoslovak rubber industry gives employment to about 5,000 workmen.

Malayan Production Outlook

THE statistics officially reported for production of estates over 100 acres in Malaya show a remarkably level production rate from the beginning of 1929 to the end of March, 1932. For the first quarter of 1932 the total is 60,671 tons against 58,484 in the first quarter of 1931, 59,548 in 1930, and 58,702 in 1929, thus showing an increase for 1932, which is mainly the result, however, of a very high January figure following an abnormally low December figure. The February and March figures, adjusted for seasonal trend, show a slight decline from the January level.

The rate of production on estates under 100 acres in Malaya has been less regular than for large estates, and even in 1931 showed a slightly declining tendency. After British abandonment of gold parity last September, the production rate of small estates increased monthly through December, but declined in January and February. Adjusted for seasonal, the low March figure shows a production rate about the same as for February. For the entire first quarter, the production has been reported as 44,149 tons against 52,972 in 1931, 55,102 in 1930, and 49,564 in 1929. The price decline prior to the ending of restriction negotiations was seemingly having the effect of curbing production by Malayan small holders, and the further decline subsequent to March 18 should logically be even more effective. It may prove that natives in Malaya are the next to follow natives in Netherlands India in reducing outputs. The April, 1932, native output is likely to show a temporary recovery above the level of the past two months; usually a falling price has caused natives in Malaya to hold back their rubber to some extent, releasing it later whether or not prices improve.

It seems impossible that incorporated agriculture can long continue to produce rubber at prices that offer too little inducement to maintain Malayan native output.

New Thickness Gauge

A NEW gauge for checking rubber samples is being introduced by the Federal Products Corporation, Providence, R. I., and is designated as Model 55 "Upright Thickness Gauge." The gauge is particularly designed for the measurement of paper, rubber, mica, textiles and flat stock of any type. The indicator is mounted on a balanced compact base, which is portable.

The table beneath the indicator spindle is 2" in diameter and can be raised or lowered by the thumb screw at the

bottom. There is a small locking nut furnished to insure the immobility of the table when once set in position.

The indicator itself is the standard Federal Model "5" indicator, graduated 0-50-100, and equipped with a second-hand by which the number of revolutions of the large hand can be recorded. The indicator has a maximum range of 7/8".

Hamburg Rubber Market

THE Hamburg market is so deadened by the inertia of recent months that the failure of British-Dutch restriction negotiations were endured composedly. Hope that seasonal activity of spring and summer may develop is causing an undercurrent of optimism in the market. Stocks in hands of interior dealers and manufacturers are believed to be very limited, and any increased manufacturing activity should have a quick reaction on the Hamburg market. Well informed local dealers estimate Hamburg stocks at 4,000 metric tons at the end of March. Net imports of rubber into Germany were 7,680 metric tons in the first two months of 1932 against 7,337 tons in 1931.

Modern Compounding Room Practice

(*Continued from Page* 106)

rator, and any other materials which amount to less than 3% of the total batch weight should always be weighed on a small scale before being placed in a box.

Blacks of all kinds have always been a serious source of trouble to color sensitive stocks. They have also detracted from the cleanliness of mill and compound rooms. Replacement of free black with a master batch has resulted in the segregation of this class of mixing, either in a separate room, or in certain Banburys in a well ventilated enclosure. Regardless of the method of segregation of the black mixing, the air in the immediate vicinity of the compound unit and the mixer contains a large amount of suspended material. Recovery of this material in an efficient and economical manner will not only improve the ventilation of the room, but will pay a small dividend. An especially designed dust collector system used in one plant not only draws in dust-laden air from the compound unit and the Banbury operating platforms, but provides a means of transporting emptied sacks to a central place where they are baled. The design of this system permits continuous operation while the dust on the filters is being collected.

Preparation of batches for No. 9 and No. 11 Banbury mixing presents the problems encountered in both the mill units and No. 27 Barbury units. These smaller Banburys are well suited to the mixing of a large variety of stocks. They require a raw material storage space which is easily accessible and of sufficient size to hold a considerable amount of each of the raw materials.

Weighing Practice in Banburys

The weighing practice and equipment used is quite similar to that employed in the mill units. Capacities of the table scales are slightly higher and additional scales may be needed with capacities as high as 500 pounds. Delivery of the batch boxes directly to the Banbury operating platform by means of a conveyor system is necessary for efficient operation.

The use of Banbury mixers has introduced the problem of the efficient use of the operator's time. A compound room in a large plant servicing a mixing department composed entirely of mills will probably work more efficiently when set up as a separate department. Banbury mixing units differ from mills in one fundamental respect. The Banbury operator does not actually mix a batch as does a mill man, but performs such operations as adding rubber, pigments or oils at certain specified times in the mixing cycle and dumps the batch from the machine. Such work seldom requires more than a small fraction of the total mixing cycle, and yet the operations must be performed at the correct time to insure uniformity. This leaves the operator with a number of unproductive hours split up into periods from 2 to 4 minutes in length. This time can be used to advantage in doing other productive work, which can be done near the machine and which does not require constant attention for longer periods of time than the operator has available. The most logical work, therefore, for him to do is to weigh his own batches. This system is employed in some factories. It has the outstanding advantage of placing the responsibility for quality directly upon one man in addition to employing more of his time in productive work.

Advances in the technology of rubber compounding have aided greatly in the growth of the rubber industry. New demands have been placed upon the compound room. The importance of accuracy has increased and has required new and improved equipment. The use of internal mixers of the Banbury type has introduced problems which have been met by departure from the older methods. The cleanliness of mill and compound rooms has been improved by the segregation of gas black compounding and mixing. These changes have resulted in the modern compound room, manned and equipped for mass production of batches of uniform composition. This is the first step in the production of articles of uniform quality.

Peru's Tire Market

IMPORTS of automobile casings into Peru for the first nine months of 1931 numbered 5,919 from the United States, 7,077 from Canada, 3,325 from the United Kingdom, 670 from France, and 1,500 from Italy. The same rate of importation during the fourth quarter of the year would bring the year's totals to 24,655, as compared with 28,500 in 1930.

The depression in the Peruvian automotive market became more intensified during 1931. Five dealers in Lima alone retired from the automotive field. Practically all dealers and distributors lost money, and thousands of owners withdrew their cars from the road.

The depression of the Peruvian currency considerably reduced the dealers' capital on the one hand, and on the other created new sales resistance by necessitating higher retail prices for automotive products. The uncertainty of the political situation adversely affected business throughout the year. A general deflationary policy, following a stabilization of exchange, caused a restriction of credit, and dealers found it practically impossible to get facilities from the banks.

Cars, trucks, busses, and motor cycles estimated as in service on January 1, 1932, totaled 11,030 (3,613 less than on January 1, 1931).

Though in normal times, registration figures should show an increase of 2,000 units per year, there was a decrease of some 300 units in 1930 and approximately 3,600 units in 1931.

Odd Uses for Old Tires

AFTER America has worn out its automobile tires, peasants in Mexico, China, Spain and Portugal get a lot more mileage out of them. Not that the impoverished peons drive on them, for a motor-car is a "rare avis" on the sagebrush or mesquite-covered wastes on which so many of them live. They shod themselves with the tires, instead.

Every year, America exports more than 50,000,000 pounds of discarded rubber, valued at more than a million dollars. Most of it is cut up into soles for primitive types of shoes worn by natives of many foreign lands. In Spain, shoes known as "alpargatas," with rope or rubber soles, are popular in the rural districts. Within recent years, a type of this shoe, known as the "arabaca," with soles made from the discarded automobile tires, became very popular.

Next to Spain, China and Hong-Kong provide the best markets for America's old automobile tires. Chinese coolies cut the tires into soles for their cheap shoes. The thinner and more worn parts of the old tire are cut out by hand to make shoes for 'rickshaw pullers. The sales price is about three cents a pair. Shepherds in Portugal use inner tubes as overshoes for their wooden sabots and pieces of casing as supplemental soles and heels on wooden shoes.

EDITORIAL COMMENT

An Import Duty on Rubber

THE Senate Finance Committee proposal for an import tax of 5 cents per pound on crude rubber is a new wrinkle in tariff history in these United States. America not being a producer of crude rubber, except in the case of small quantities of guayule, the tax cannot be in any sense termed a protective measure, and, as the Senate Finance Committee declares it will be a measure for revenue only, it is estimated that such a duty will raise a total of fifty million dollars of revenue per annum for the Government. The efficacy or economic soundness of taxing raw commodities not produced in the United States is highly questionable.

Domestic rubber manufacturers and crude rubber brokers will doubtless profit temporarily from the enactment of such a measure, because of the resultant advance in value of crude rubber inventories and the general market levels of crude rubber stocks in the hands of brokers. But it must be remembered that there is already on hand and afloat to the United States a tonnage not subject to this duty which will supply the factory requirements of American manufacturers for an entire year. Consequently, the advantages to the Government of any import duty must be considered as practically nil.

If the proposal of the Senate is to be a temporary measure, it may be quite effective in adjusting previous inventory losses and helpful in computing annual statements of such rubber manufacturing companies as hold large stocks at the present time. It would also indirectly aid the producing interests in the Far East, sorely in need of help at the present moment, in marketing rubber at a small profitable figure.

On the other hand, the Senate proposal cannot prove to be a sound far-sighted measure.

With an import duty new stocks will naturally not be imported until the surplus supplies already on hand have been practically exhausted. When that moment arrives, the new import duty will be felt by the American consumer in the tires and rubber goods which he purchases from American manufacturers, because it is only natural, and a true economical principle, that such import duties should ultimately revert to the consumer. But, there is an even more serious aspect to any permanency in such a tariff policy. A prolonged imposition of 5 cents a pound duty on crude rubber over Canadian imports might easily divert shipments of rubber to American or Canadian-owned plants, in Canada, where tires, mechanical rubber goods, drug sundries, etc., are easily capable of being produced and imported in increased quantities into the United States at a lower figure than American plants can produce them, under such a tariff burden.

Recognizing that the economic situation in the United States is precarious, as every effort must be made to balance the budget of the Federal Government, this new departure from the established tariff policy of the United States, not to tax raw commodities which are not produced within its continental borders, calls for serious consideration. The United States has been the critic of foreign countries who have imposed export tax restrictions on raw materials, as witness the overtures of the American Government against the British rubber restriction policy so famously known as the Stevenson Scheme. An entire reversal of our tariff policy in taxing raw commodities would seem to call for a most careful and thorough investigation of the present situation.

Motor Industry Plans

IT IS recognized by economists that the motor industry of the United States is the keystone in any edifice of business revival. It has been pointed out that one out of every ten persons of gainful occupation in the United States is dependent upon the automotive industry. Efforts are being concentrated to stimulate sales of automobiles so as to raise this key industry to a point where it will reflect its prosperity along the other lines of trade. The Firestone Tire & Rubber Co. have taken the initiative in this regard in urging its employes to pledge themselves to buy new cars during the present season.

Nearly two-thirds of all new motor car owners come within the category of a $3,000 income. A concentrated effort towards automobile sales is a direct contribution toward an advancement in the output of the rubber industry, entailing more employment, greater production of tires, and a general betterment all along the line of interest associated with the rubber industry. The purchase of a new car will operate to increase rubber consumption, possibly add another man in lucrative employment, place more ready cash to the aid of the neighborhood store, provide fresh air and enjoyment on week-end trips, and will be a definite contribution toward the revival of business.

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General Manager.....PETER P. PINTO
Editor.....J. P. BUSHNELL
Circulation Manager.....M. A. KRAMER

Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

GETS GOVT. APPROVAL ON GIANT PLANE TIRE

Approval of the Department of Commerce has been received on the Firestone air balloon tire 15.00-16 for Ford tri-motor planes.

Coincident with this approval Firestone announced receipt of the first order for installation of this type equipment from the American Airways and is going ahead with this installation on all their transport planes of this type.

The approval also brings an increased gross load rating. The new gross load rating for Ford tri-motor planes equipped with these Firestone 15.00-16 air balloons is increased to 14,000 pounds.

Decreased maintenance cost of the planes is claimed as an important advantage of this new tire equipment, as these big, soft tires, in going over rough or soft fields, do away with much of the stress and jar upon the parts of the plane. Comfort to passengers is increased in riding over rough fields as well as in landing contact with the ground. There is much less tendency to mire in or nose over in muddy fields and the transport lines will be able to operate with more regularity in muddy and rainy weather.

It was also announced that this new 15.00-16 equipment is offered as original equipment at the Ford factory on this type of plane.

Firestone's announcement follows a period of long testing of this equipment, including the testing over a period of 14 months on Firestone's own 14-passenger Ford tri-motor plane, the "Firestone."

This Firestone air balloon for airplanes is the same type as the Firestone air balloon tire for automobiles.

Tibbett Renews Radio Contract

Lawrence Tibbett has just signed a new contract with The Firestone Tire and Rubber Company by which his engagement as the regular artist for "The Voice of Firestone" on the Monday night programs is extended. Radio fans are now assured of hearing Tibbett on the air through the spring season.

The tremendous success scored by Tibbett in his radio appearances with Firestone accounts for the continuance of the engagement. When his sponsors entered into a contract with him several months ago, it was foreseen that an artist as versatile as this famous Metropolitan opera star would quickly build up a huge following, but the response has exceeded all expectations.

Wins $500 Suggestion Award

A. A. McCarthy, Firestone Service stores, Plainfield, N. J., is the recipient of a $500 award from the Firestone Tire and Rubber Company sales suggestion board. This is one of the largest individual awards ever made a Firestone employee.

The idea that won the award, and which was the sixth suggestion McCarthy had made but the first that had received an award, was for a merchandising plan that is said to be meeting with success in service stores all over the country.

Buys Rubber-Tired Car

The Reading Railroad will operate the first stainless-steel, pneumatic-tired rail car of the Budd-Micheline type in this country, according to an announcement by the Edward G. Budd Manufacturing Company. The railroad has entered its order for a new 56-passenger car of this type, powered by an 85-horsepower Diesel motor. The car will be placed in service between Princeton and Trenton, N. J. and may also be used experimentally on other parts of the Reading system.

New York Rubber Group To Meet May 18

THE program of the Spring meeting of the New York Rubber Group, A. C. S., has been scheduled for May 18, at the club rooms of the Building Trades Employers Association, 2 Park Avenue, New York City. Dinner will be served at 6 p. m.

The program of papers to be presented include the following:

1. "Trends in the Use of Latex," by G. D. Fratz, Consulting Engineer.
2. "Application of Rubber in the Plating Industry," by H. N. Norris, of the engineering staff of the Western Electric Company.*
3. "Air Conditioning in Railway Cars, Homes, Stores, etc.," by A. M. Ragsdale, Carrier Engineering Corp.

In addition to the papers to be presented there will be an entertaining program following and during the dinner, with Walter Grote as chairman of the Entertainment Committee. His chairmanship is sufficient to assure all guests of an enjoyable evening.

Reservations at $2.00 can be secured from Peter P. Pinto, secretary, 250 West 57th Street, New York City.

*In the announcement of the meeting sent to members, the company affiliations of Mr. Norris was given, in error, as the General Electric Company, instead of the Western Electric.

TIRE CONTRACT FOR OIL CHAIN STORES

Confirmation was recently given of an announcement by Associated Oil Company of San Francisco that it has arranged with Firestone and Goodrich to market both lines of tires in its 500 west coast service stations.

The sale arrangements were completed through the west coast subsidiaries of the two tire companies.

Stocks already have been distributed and retail sales start immediately.

This is the first large oil station contract consummated since recent complaints by National Tire Dealers Association against the practice of selling branded lines through gasoline chains.

Bickett Plant Reopens

Announcement is made of the reopening of the Watertown plant formerly operated by Bickett Rubber Products Corporation of Wisconsin, by L. M. Bickett, president. The plant will be operated by a new corporation under the name of L. M. Bickett Company, in which corporation substantially all of the old stockholders of Bickett Rubber Products Corporation will be interested.

The Falk Corporation of Milwaukee will also be a stockholder of L. M. Bickett Company, the new corporation, and, being a substantial stockholder, will be represented on the board of directors of the new corporation.

The list of products which it is intended to manufacture at Watertown is as follows: mechanical rubber goods, baby carriage tires, molded rubber goods, rubber bond grinding and polishing wheels, extruded rubber, stair treads, automobile mats, and sponge rubber goods.

Rubber Shipments Drop

Exports of crude rubber by British Malaya during April, showed a continuance of the decline which developed at the start of the year. Shipments last month were 36,670 tons, compared with 39,903 tons in March, and 43,453 tons during April, 1931.

Exports from Ceylon during April were 3,043 tons, against 3,405 tons during March, and 3,487 tons during April, 1931. Of this amount, 1,761 tons were shipped to the United States, against 2,319 tons during March, and 2,263 tons during April, last year.

GOODRICH NOW USING CAROLINA COTTON

Certain Carolina cotton from the last crop has shown sufficient improvement in quality so that it is now going into tires and other products manufactured by the B. F. Goodrich Company, Akron, Ohio, it was announced recently by Charles Thompson of Martha Mills, textile division of the Goodrich company at Silvertown, Ga.

A quantity of Carolina cotton has already been purchased by the Martha Mills, to be fashioned into fabric which later will find its way into goods manufactured at the Goodrich plants. Goodrich uses 100,000 or more bales of cotton annually.

Carolina cotton is being bought, Mr. Thompson says, because of its improved qualities this year. Constant search is conducted to find the finest cotton grown for the purpose of tire manufacture.

The Goodrich mills at Silvertown, where "weftless" corn tire fabric is produced, operates 80,000 spindles and is one of the largest plants of its kind in the South.

Norwalk Tire & Rubber

Consolidated income account for six months ended March 31, 1932, as recently reported, compares as follows with 1931:

	1932	1931
Gross profit on sales....	$156,448	$94,814
Expenses	82,484	64,984
Operating profit	$73,964	$29,830
Other income	4,747	4,094
Total income	$78,711	$33,924
Depreciation	25,396	25,109
Other deductions	14,166	6,056
Net profit	$39,149	$2,759

New Exchange Members

Recommendations that Edward A. Crawford and Walther J. Wessels be admitted as members in the Rubber Exchange of New York, Inc., have been approved by the board of governors. Mr. Crawford is a member of the firm of E. A. Crawford and Company, 60 Beaver Street, New York. Mr. Wessels is a partner in the firm of Wessels, Kulenkampff and Company, 113 Pearl Street, New York.

Foreign Branch Factories

In view of the present high British tariff wall against foreign goods, more and more American firms are considering the establishment of subsidiary factory branches in the United Kingdom. The firm of Brown, Anderson and Loeb, 120 Broadway, New York, N. Y., specialize in foreign financing and distributing and have been particularly successful recently in completing negotiations for a large American chemical company to build a plant in England. They advise that they would be glad to get in communication with any American rubber manufacturer who is considering the establishment of a factory abroad.

Firestone's Cow Sets Record

A cow in the herd of H. S. Firestone, Sr., chairman of the board of Firestone Tire & Rubber Co., has set a new official record for production of milk and butter fat, which entitles her to entry in the advanced register of the American Guernsey Cattle Club, Peterboro, N. H.

The club announces that the cow, 2-year-old Elizabeth of Hillbrook, has a record of 13,138.5 pounds of milk and 604.9 pounds of butter fat in class G.

BRITISH DOUBLE DUTY ON RUBBER PRODUCTS

Additional British import duties, recommended by the Tariff Advisory Committee, are effective as from April 26. They include another 10 per cent duty on manufactures (other than sheets, piping, tubing and rods, and machinery belting) either wholly or partly of rubber, balata or gutta percha (including vulcanite and ebonite), and on boots, shoes, overshoes, sandals and slippers of all descriptions and materials, finished or unfinished, and shaped parts therefor. The total duty on all these goods is thus raised to 20 per cent.

Cable Firm Has Jubilee

Callender's Cable and Construction Company, one of the biggest British electric cable concerns, has just celebrated its jubilee having been founded on April 12, 1882, as Callender's Bitumen Telegraph and Waterproof Company.

W. O. Callender, the father of Sir Tom Callender, now the managing director of the firm, had established in 1877 the business of Callender & Sons, and in 1881 he was granted a patent for "vulcanized bitumen," a material that could be used for covering heavy electric cables as well as light telegraph wires. At that period the system of distributing current by means of low-tension direct current was developing, but no recognized scheme existed for effectively protecting the cables buried in the streets. In these circumstances, Sir Tom Callender originated his "solid system," in which the cables were laid in continuous cast-iron troughs in which a molten preparation was poured and set into a solid mass on cooling.

Later the company, which then assumed its present name, gave attention to the manufacture of armored cables to be laid direct in the ground, and of various types of rubber insulated electric conductor.

Kelly-Springfield

Kelly-Springfield Tire Company certificates of deposit for 6 per cent cumulative preferred stock $100 par value and certificates of deposit for 8 per cent cumulative preferred stock $100 par value have been admitted to the list of the New York Stock Exchange.

RUBBER OUTPUT CEASES ON 212 PLANTATIONS

Cable advices from Batavia, Java, to the Rubber Exchange of New York, states that tapping has ceased on 212 rubber plantations in the Dutch East Indies, involving a producing area of 70,235 acres.

Tapping of rubber trees on 121 other plantations, representing 43,672 acres is being restricted voluntarily by the owners. This curtailment movement represents an untapped area of approximately 12 per cent of the total rubber land under cultivation in 1931, or an annual output of about 20,000 tons.

Another cable to the Exchange, April 23, giving the results of the Far Eastern census for March, shows that rubber production on small estates under 100 acres in size in British Malaya, declined from 14,241 tons in February to 11,434 tons in March. Production on large estates, over 100 acres in size, declined from 18,731 tons in February to 18,462 tons in March.

Stocks on hand on Malayan estates totaled 20,831 tons at the close of last month, as compared with 21,165 tons at the end of February. Dealers' stocks at the same time declined from 27,750 tons to 27,416 tons.

Proctor With Herron & Meyer

Lawrence B. Proctor, member of the firm of Belford & Co. for many years, has become associated with the rubber brokerage firm of Herron & Meyer, 50 Broad street, New York, N. Y., it was announced recently. At the same time Herron & Meyer have made preparations to move into larger quarters at 82 Beaver street, and as heretofore will be in charge of Philip Billhardt. Joseph S. Rodenbough recently retired from the firm of Herron, Rodenbough & Meyer to join Pusinelli & Poel, Inc.

Overman Tire Report

Overman Cushion Tire Company, Belleville, N. J., and with head offices in New York, reports for year ended December 31. a deficit after expenses, depreciation and other charges, $30,865 compared with $99,142 loss in previous year.

Exchange Seat Sold

The membership of Luis F. Yglesias, on the Rubber Exchange of New York, Inc., was purchased recently by James R. Shannon for $650, an advance of $50 from the last previous sale.

Latex Plant For Sale

The plant of the Latex Rubber Products, Inc., located at 2705 East Market Street, Akron, O., will be offered for sale at public auction on Friday, May 13, 1932, at 10 a. m., by Roderick Jones, trustee in bankruptcy, of Newark, O. The plant is newly equipped with the latest Gammeter machinery for the manufacture of stocking protectors, bathing caps, finger cots and other similar rubber products. B. G. Motz, 708 Akron Savings and Loan Building, Akron, O., is auxillary receiver.

INDIA TYRE, LTD., IS TO BE REORGANIZED

H. A. Holms, chairman of the India Tyre and Rubber Company (Great Britain), Ltd., has issued a circular to stockholders stating that it will not be possible to issue the annual report before the end of April. The Prudential Assurance Company, which is a stockholder, in view of persistent criticisms and rumors, approached the directors, who willingly agreed that a thorough investigation by independent accountants was desirable. This investigation was accordingly made. The accounts for the year to December 31 last, now being audited, will show a large loss.

A large part of this loss is due to adjustments applicable to previous periods, mainly in respect of stocks of finished products, and to losses on forward contracts for materials. In making up the accounts to December 31, finished products will be valued on a conservative basis and raw materials on hand or covered by forward contracts will be written down to market values at the close of the year. Provision will also have to be made in respect of bad and doubtful debts and other losses.

The Prudential Assurance Company further informed the board that it considered the control and management must be strengthened, and with the directors' approval Mr. Holms was appointed a director. It was subsequently felt that a whole-time chairman was essential, and to facilitate this W. P. Naismith, while remaining on the board, willingly agreed to resign the chairmanship, and Mr. Holms accepted the position of whole-time chairman. A. M. Melville has handed in his resignation both as director and managing director, and this has been accepted. To fill the vacancy caused by Mr. Melville's resignation, W. C. Thorne has been appointed a director.

During the year it was decided to change over the designs of the tires to improved patterns. This involved considerable expense and delays, but the new tires are giving satisfaction. A thorough reorganization of the company's activities is proceeding, and it is anticipated that effective control and considerable economies in working will result. The Prudential Assurance Company sometime ago took the necessary steps to meet the immediate financial requirements of the company.

Exchange Differentials

The adjustment committee of the Rubber Exchange of New York, Inc., have fixed the price differentials between the various grades of hevea plantation rubber which shall prevail on all deliveries against new "A" contracts, for the month of May, 1932, as follows: No. 2 crepe (thick or thin) at 1 point; No. 2 ribbed smoked sheets at 6 points; No. 3 ribbed smoked sheets at 12 points; No. 4 ribbed smoked sheets at 24 points; No. 5 ribbed smoked sheets at 50 points.

The limit of allowance on No. 2 crepe will be 25 points and the allowance on rubber delivered in bales is set at 8 points.

New Porous Rubber

Two Norwegians, who have been carrying on a series of experiments on a new method for preparing rubber, have recently announced some satisfactory results, according to advices to the Department of Commerce. The new product may be described as porous, although the word does not sufficiently define its characteristics. The cells are separate and not connected by air passages. By the control of the number and size of the cells, the rubber can be made more or less elastic as desired. Unlike sponge rubber the new product will not take up water.

Both laboratory and practical tests have been carried out on the new rubber and tests made at the Technical School at Trondheim are said to show that the rubber has both weight resistance and elasticity to a relatively high degree. Some of the uses to which this product will probably be best adapted include toys, building trades, floor coverings, furniture upholstery and seat upholstery.

Attempts will be made to find sufficient capital to start manufacture in Norway.

HUDSON CAR INCREASES USE OF RUBBER PARTS

Recent changes in design bring the number of parts made from rubber in Hudson cars up to two hundred and fifty. This compares with one hundred and forty-two which were used in the 1926 model of the same make.

According to Max F. Wollering, in charge of production at the Hudson and Essex plant, the number of individual rubber pieces utilized in the assembly of a Hudson automobile actually exceeds 250 pieces. In an Essex 240 pieces of rubber are used. Experiments are being conducted which may lead to a further use of this material.

New Michigan Company

The Rubber Manufacturing Company, a newly organized Ohio corporation, capitalized at $25,000, with main offices in Toledo, has purchased the machinery and equipment of the Tower Rubber Company which formerly operated in Chelsea, Michigan, and expect to begin operations shortly.

Eight men are now connected with the new corporation, which will be operated entirely on a co-operative basis, with no stipulated wages or salaries, which will be dependent upon the earning capacity of the venture, according to company officials. S. F. Sawyer, of Toledo, heads the company, and E. L. McKimm of the same city will be in charge of production.

Products to be manufactured include sponge rubber, stair treads, wall paper cleaner, etc. According to officials of the company, sales of their products to date will keep the plant in capacity production for the next four months. Their accounts include Kresge, Marshall Field, Goldblatt, J. L. Hudson Co., Crowley-Miller, etc.

RUBBER GROWERS PLAN INDIVIDUAL POLICIES

The plantation output returns for March do not, it is believed, fully reflect the effects of the restriction decision, the month having been well advanced before the efforts to reach an agreement fell through. April figures will, however, prove a more reliable indication of the extent to which curtailment of production is being carried out.

The recent circular of the Rubber Growers' Association of London makes it plain that no further policy of official cooperation in the plantation industry appears possible. Each concern is now making its own arrangements to weather the crisis. Those with financial resources are taking steps to conserve them.

Sir Herbert Wright, chairman of the Java Amalgamated Rubber Estates, announced recently that the policy of that undertaking will be to harvest only a small percentage of the normal crop and only from the best trees. He declares this to be the best policy for all estates to adopt, not only in their own interests, but in the interests of the entire industry. Some high-cost producers, however, are afraid that such a policy would quickly exhaust their resources, and have therefore decided to produce "all-out" in the hope that they will thus be enabled to reduce their net output costs and eke out their resources until conditions improve.

Other undertakings are only working their low cost areas and some may temporarily suspend operations altogether, putting their estates on a care and maintenance basis. It is now a case of each estate attempting to work out its own salvation with the policy it thinks best fitted to its needs.

Leonard Firestone at Miami

Leonard K. Firestone, son of Harvey S. Firestone, will have charge of operations at Firestone Service Stores, Inc., in Miami. He is the third of the Firestone boys to enter his father's concern, Harvey, Jr., being vice-president of Firestone organization, and Russel A. being manager of the Akron district of Firestone.

Rubber Stock Quotations

	Last Price April 5		1932 High	1932 Low
Aetna	1¾	2⅝	3	1¾
American Hard Rubber	—	—	—	—
Faultless	19	23	25	19
Firestone	12	12	15	12
do. 6% pfd.	48¾	49½	59½	48¾
Fisk	⅛	⅛	⅜	⅛
do. 1st pfd.	—	—	⅞	¼
General	45	45	49¾	49¾
do. pfd.	60	60	—	—
Goodrich	3¼	3¼	5⅝	3¼
do. pfd.	9½	9½	17	9½
Goodyear	10	11	18	9⅛
do. 1st pfd.	34	42	59½	34
India	3	4½	7	3
Kelly-Springfield	1	1⅛	2⅝	1
do. 6% pfd.	—	18½	39⅞	16½
Lee	2	2	2⅛	2
Mohawk	1⅝	2	2½	1
do. pfd.	20	20	—	—
Norwalk	1	—	—	—
Pirelli	—	—	30⅞	26⅞
Raybestos-Manhattan	—	8	11½	4⅞
Seiberling	1⅞	2½	4½	1⅜
do. pfd.	15	15	22	15
Thermoid	1¼	1½	3	1
U. S. Rubber	3⅛	3⅜	5⅜	3
do. pfd.	—	6⅜	10⅞	6⅜

Names in the News

CHARLES S. MOORE, who for the past year was superintendent at the Holfast Rubber Company plant, Atlanta, Ga., has accepted a position as technical superintendent of the Murray Rubber Company, Trenton, N. J. Mr. Moore has been in the rubber manufacturing industry since 1914, when he was chief chemist of the McGraw Tire and Rubber Company. Later he was associated with the Corona Cord Tire Company and the Denman Tire and Rubber Company.

G. L. MATTHIAS, general superintendent, mechanical goods, B. F. Goodrich Company, was a speaker before the Ohio Safety Congress in Columbus, April 19. D. L. STRAITON, Miller Rubber Products Company, spoke to the group, April 20. H. W. Low, also of Miller, chairman of the rubber section of the state organization, and W. L. SCHNEIDER, Goodrich safety engineer, attended the three day convention.

GEORGE OENSLAGER, B. F. Goodrich Company research chemist, returned to Akron, April 18, following a trip to the Pacific Goodrich Company factory, Los Angeles. Calif.

RAY BLANCHARD, general superintendent of the Hood Rubber Company division of the B. F. Goodrich Company, located at Watertown, Mass, has been spending some time at Akron, conferring with company officers at the Goodrich plants.

JAMES J. NEWMAN has been named as assistant to President James D. Tew of the B. F. Goodrich Company. Mr. Newman entered upon his duties in the Goodrich offices March 15. He came to his new position from the Pick-Barth holding corporation of New York. He was president of that concern since 1929. Previously, he was for nine years with the accounting firm of Lybrand, Ross Brothers and Montgomery. During the World War Mr. Newman served on General Charles G. Dawes' staff. He was also treasurer of the Stanley Company of America, one of the largest motion picture theatre organizations.

WILLIAM E. DUCK, formerly of Akron, now managing director of the Firestone Tire and Rubber Company plant at Brentford, England, near London, arrived in New York on the S.S. Aquitania recently. Mr. Duck is well known in Akron, formerly being located at the local Firestone headquarters. He comes to Akron for conferences with Firestone officials.

P. W. LITCHFIELD, president, Goodyear Tire and Rubber Company, member of the board of directors, United States Chamber of Commerce, and C. B. RAYMOND, former president of the Akron chamber of commerce, will represent Akron at the United States chamber's 20th annual meeting, May 17 to 20, at San Francisco.

Badenhop Corporation Expands

The Robert Badenhop Corporation, well-known New York crude rubber importers, moved their offices to the Woolworth Building, New York, on April 18th. The new location provides larger quarters for the handling of their business with the rubber users throughout the United States and Canada.

The officers of the corporation are: Robert Badenhop, president; G. LeRoy Scheinler, vice-president; Murray Millenthal, treasurer, and James F. Kiernan, secretary,

ROBERT BADENHOP

all of whom are active in crude rubber circles and have many years' experience in the business.

Robert Badenhop, president of the organization, was active in the crude rubber markets of London and Hamburg from 1902 to 1907. April 22nd of this year marked his twenty-fifth year of activity in the New York rubber market. Mr. Badenhop, though only forty-nine years of age is considered one of the old timers in the rubber trade.

Mr. Badenhop's home is in Newark, N. J. He is married and has three children, a daughter, twenty, and two sons, twelve and sixteen. Mr. Badenhop is prominently identified with the rubber trade, being a director of the Rubber Exchange of New York, Inc., a member of the board of governors of the Rubber Exchange Clearing House, Inc., and a director and treasurer of the Rubber Trade Association of New York, Inc. When the Rubber Trade Association of New York, Inc., was organized, Mr. Badenhop was one of its founders.

Despite the generally unsatisfactory economic condition in both crude rubber and general business, this firm having confined themselves to the merchandising of crude rubber has enjoyed a steady and substantial increase over the past many years.

L. T. DRAKE, prominent in Akron tire automotive circles for the past 12 years, has rejoined the B. F. Goodrich Company sales department in Goodrich Silvertown, Inc., retail division of the company.

H. R. FERGUSON, formerly associated with the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., has accepted a position with the Thiokol Corporation, Yardville, N. J., effective April 1, according to an announcement from BEVIS LONGSTRETH, president of the Thiokol company.

DR. SIDNEY M. CADWELL, director of the development department of the United States Rubber Company, gave a talk on April 21 at the University of Toledo, before the Toledo section of the American Chemical Society, on the subject of "Anti-Oxidants in Rubber."

JAMES S. PEDLER, of the aeronautical sales department of the B. F. Goodrich Company, addressed the students of Professor Alexander Klemin's class in aeronautics of the New York University, on April 18. He spoke of the new developments in the Goodrich airplane de-icers and illustrated his talk with motion pictures made in flight over Port Columbus, Ohio and Akron Airport.

Firestone Adds to Awards

Firestone Tire and Rubber Company employees are working for an added $100 suggestion award for suggestions submitted between April 1 and May 31. This award will be in addition to the usual compensation.

It is planned to make the award not later than June 20, and judging by the number of responses to the proposal, many Firestone workers are figuring on that $100 for vacation expenses.

Lecturing on Rubber

Ralph B. Huber, formerly chemist with the Fisk Rubber Company, Chicopee Falls, Mass., has recently been lecturing before clubs and other organizations on the subject of rubber in its various phases He recently spoke before the Springfield, Mass, Rotary Club; the Kiwanis Club of Chicopee Falls, Mass., and several church clubs.

Goodrich Play Ends Tour

The B. F. Goodrich Company party which has been conducting sales conferences all over the nation, and putting the punch into them with a three act drama of tire sales methods has returned home to Akron, Ohio.

In the 12 weeks that have intervened from start of the tour, February 1, the Goodrich party has presented the play carrying the 1932 sales message to 15,000 dealers and key salesmen in the field, traveling more than 16,000 miles, and giving 30 shows. Phil Kelly, assistant to the general sales manager, tire division, has been in charge of the latest swing.

Rubber News Around the World

INSIDE STORY OF THE RESTRICTION PARLEY

The Dutch Minister for the Colonies has given a long reply to the question put to him by Mr. Joekes (the Liberal member of the Dutch Lower Chamber) for information on the joint decision of the British and Dutch Governments against rubber restriction.

"As a result of consultations between the British Colonial Office and the Dutch Department for the Colonies," states the Minister, "it was agreed, in principle, that of the many schemes published the only chance of success was provided by the so-called quota plan.

"These conclusions led to the working out of a rubber restriction scheme by British and Dutch experts, based on the following points:

"(1) For fixing the export quota of each country of production the highest export figure in recent years should be taken, the anticipated output of the area already planted to be taken into consideration.

"(2) Producers' quota to be left to each Government.

"(3) Restriction to begin with the curtailment of exports by 50 per cent by means of the issue of licenses, further extension of the rubber area to be discouraged.

"(4) Restriction to remain in force for five years.

"(5) An international advisory committee would judge the efficacy of the plan and recommend, if necessary, an increase or decrease of the percentage of restriction.

"The Minister for the Colonies informed the Government of the Netherlands Indies of this scheme, whereupon the Governor-General immediately cabled a number of objections.

"Further discussions were held in London, from which it appeared that the British Government also had serious objections against the proposed restriction scheme. This led to the conclusion that, under present circumstances, it was impossible to devise and carry through an official international plan."

Nyasaland Rubber

Preliminary statistics issued by E. H. Warren, Comptroller of Customs for Nyasaland, show that there were no calculable exports of rubber from the Protectorate in 1931, whereas in the previous year 94,185 lbs. of the commodity, valued at £1,627 ($8,135), were exported.

Bata's British Factory

It is reported that plans for the establishment of the new Bata rubber footwear factory, at East Tilbury, outside of London, are proceeding and three buildings will be erected.

E. S. SARGEANT, vice-president and general manager of Canadian Goodrich Company, Limited, who was recently elected vice-president of the Rubber Association of Canada

Rubber Profits

Despite the low prices ruling, three British rubber producing companies, whose reports have just been issued, have been able to report a profit. They are the Chersonese, the Labu, and the Cheviot Rubber, all three of them having estates in Malaya. The Chersonese secured a profit of £6,292, and the directors have declared a dividend of 2½ per cent free of tax. The Labu obtained a profit of £5,289, and the Cheviot secured a profit of £4,951, but no distribution is being made to the shareholders.

Rubber to Burn

G. Nicol Thomson, who is on the boards of the Lunuva and Malayalam rubber companies, suggests a new way of reducing the unwieldy stocks of rubber. In a letter to *The Times*, of London, he points out that it is not generally known that raw rubber is a splendid thing for lighting fires and for resuscitating a dying fire. If the rubber is cut into strips, one pound is sufficient to light seven or eight ordinary fires. The small bundles of firewood generally used cost 6d. for seven bundles, and one bundle is required to light a fire. Raw rubber in strips can now be obtained and used for the same purpose with better effect at a cost of under ½d. a fire, so that every user of raw rubber for fire lighting today receives more for his money than if he bought ordinary firewood. Rubber is in every way handier; it is cleaner and easier to light. There are no dangerous sparks. Raw rubber when burning has no offensive smell whatsoever.

CEYLON REPORTS 100,000 ACRES OUT OF TAPPING

In reviewing the position of the various agricultural products of the Island, during 1931, the Planters' Association of Ceylon, in their annual report, make the following observations in connection with the rubber industry.

"In offering a few general remarks on the subject of the rubber industry as far as Ceylon is concerned, it can, we think, be said with little fear of contradiction, that matters might well have been far worse.

"There have been three outstanding factors which have affected the rubber market during the year, the first being the removal of the export duty in June, the effect of which was very short-lived as regards actual selling price, the second being the suspension of the gold standard and the drastic change in the Constitution of the Home Government, and finally the repeated rumours and counter-rumours concerning restriction negotiations with the Dutch.

"The situation is, therefore, that the industry has seen the close of yet one more very difficult year and despite the fact that at least 100,000 acres of rubber have been thrown out of tapping in Ceylon alone, there is no tangible sign that a closer balance between the supply and demand can be hoped for in the near future.

"There has, of course, been the inevitable increase in unemployment amongst rubber estate personnel which has thrown an additional burden on the Planters' Association through the medium of the One Day's Pay Fund, and with the individual cash resources of estates depleted by the loss which the year 1931 must inevitably show in the majority of instances, it is to be feared that the season now commenced calls for even greater fortitude from all."

Plantation Production Outlook

Opinion among the Singapore rubber brokers and estate agents, according to cable advices to the Department of Commerce, is that Malayan estate production will be maintained this year, up to and through June, with only slight declines from the 1931 rate, but that beginning with July the weaker estates will close gradually and that the end of the year will show a probable drop in total estate production to 85 per cent of 1931. Reports indicate 12,000 to 15,000 acres have been closed to tapping since March 21, but several estates are tapping "all-out" heavily.

Symington and Wilson, London rubber brokers, say that they "fear there are many estates which will be obliged to close down owing to the exhaustion of funds and think it is unlikely that holders of rubber shares will put up further funds to bolster up companies whose reserves have been dissipated in the past two years, and which can hold out no prospects.

United Carbon Report

United Carbon Company's net profit for the first quarter, based on preliminary figures, is estimated by the management at $60,000 after ample deductions for depreciation and depletion, interest and all other charges, according to Dow, Jones Company reports. This result compares with a profit of $22,257 in the corresponding quarter of 1931, which included a non-recurring profit item of $45,000. Consequently, the result for the first quarter this year is comparable to an operating loss of $23,000 last year, indicating an operating improvement of $83,000.

Inventories of carbon black continue to decrease, amounting on March 31 to $53,000 less than at the end of 1931. Cash balance has decreased by $118,000, a decrease more than accounted for by investments made during the quarter in producing gas properties, which should add materially to the company's future earnings.

Profit in the first quarter is attributable to profitable gas sales, while at the same time the management has continued to effect economies in the carbon black division, so that the handicap to profit from this source has been reduced to a minimum. The ratio of current assets to current liabilities March 31 shows a slight decrease from the end of last year, when it was 3.43 to 1.

Rubber Leads Ohio's Trade

Despite the letdown in rubber tire manufacturing in Akron, the rubber industry ranked first among Ohio exports during the 12-month period ending last December, according to a statement of the Department of Commerce, in a statistical summary of merchandise exports in 1931.

Ohio exports were valued last year at $106,204,818, compared with $165,157,828 for 1930, the summary showed. Ohio ranked seventh among all the states in volume of exports, it was said.

Rubber tire exports in 1931 were valued at $10,300,501, compared with $16,107,452 in 1930, and were followed by "other industrial machinery" exports, metal-working machinery, iron and steel plates, skelp and strips.

Miller Gives Awards

Six employees of the Miller Rubber Products Company, Inc., division of the B. F. Goodrich Company, received suggestion awards in April.

They are: Ray J. O'Donnell, anode department; A. J. Thebold and Charles Champlan, warehouse offices; Leonard Wellington, molded goods; Ray W. Holeman, electrical maintenance, and Samuel Linch, general molded goods.

Continental Rubber Moves

The Continental Rubber Company, formerly at 1775 Broadway, New York City, N. Y., have announced the removal of their offices to Room 2707, 745 Fifth Avenue, effective April 30.

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NEW YORK, MAY 5, 1932

Crude Rubber

THE market price for crude rubber over the last fortnight shows a very stable trend, staying at approximately 3 cents a pound for spot on the New York outside market, although reports were current that a large consumer secured fair quantities at 2⅞ cents. There was a slight flurry in the market early in May, due to the Senate proposal for an import tax of 5 cents per pound and New York Rubber Exchange prices reached 3.45 cents for spot on May 4. March consumption was a disappointment and registered the low figure for the year. At the same time, a surprisingly large import tonnage was recorded, in spite of prevailing low prices. Factory interest was very low and there was no stimulus in the market to raise the price levels.

Prices quoted on the New York outside market as of April 4th were as follows:

Plantations—			
Ribbed Smoked Sheets—			
Spot-May	.03¼	@	.03½
July-Sept.	.03¼	@	.03½
First Latex, crepe spot	.03⅞	@	.04½
Amber Crepe, No. 2	—	@	.03¼
Amber Crepe, No. 3	—	@	.03⅛
Amber Crepe, No. 4	—	@	.03
Brown Crepe, Clean thin	—	@	.03⅛
Brown Crepe, rolled	—	@	.03
Liquid Latex, per gal.	.70	@	.75
Paras—			
Up-river, fine	—	@	.05½
Up-river, coarse	Nominal		
Acre Bolivian, fine	—	@	.06
Caucho Ball, Upper	.02½	@	.03
Centrals—			
Central scrap	.04	@	—
Esmeraldas	.04	@	—
Balata—			
Block, Ciudad	—	@	.18

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
May	1⅞	@	2d
June	1⅞	@	2d
July-Sept.	2	@	2 1/16d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot	1 1/16	@	1 3/16d

Daily closing prices and sales on the Rubber Exchange of New York are given in the table below:

Reclaimed Rubber

Reclaim rubber production held up during the last fortnight to previous levels irrespective of the continued low price of the raw commodity. Consumption during March was relatively high, under the circumstances, and continued to show the important place which reclaim holds in present pounding practices. Prices have not dropped since last reported and it seems assured that reclaim has secured a permanent place in batch formulae irrespective of price. Late quotations follow:

High Tensile				
Super-Reclaim Black	lb.	.05	@	.05¼
High Tensile Red	lb.	.05	@	.05¼
Shoe				
Unwashed	lb.	.05	@	.05¼
Washed	lb.	.05¾	@	.06
Tube				
No. 1 (Floating)	lb.	—	@	.06½
No. 2 (Compounded)	lb.	.04¾	@	.05
Tires				
Black	lb.	.03¾	@	.04
Black, selected tires	lb.	.04	@	.04¼
Dark Gray		.05	@	.05¼
Light Gray	lb.	.05½	@	.06
White	lb.	.05½	@	.05¾
Truck, Heavy Gravity	lb.	.05	@	.05¼
Truck, Light Gravity	lb.	.05¼	@	.05½
Miscellaneous				
Mechanical blends	lb.	.03	@	.03½

Scrap Rubber

The scrap rubber market has registered no material change over the last fortnight. The low price for scrap continues to be a handicap in accumulation centers, but the trade has been generally encouraged by the continuous demand from reclaiming plants.

The latest quotations on standard grades are listed below:

(Prices to Consumer)

Auto tire peelings	ton	18.00	@20.00
Mixed auto	ton	7.50	@ 8.75
Bicycle tires	ton	5.00	@ 6.00
Clean solid truck tires	ton	24.00	@26.50
Boots and shoes	ton	15.00	@17.50
Arctics, untrimmed	ton	10.00	@12.50
Inner tubes, No. 1	lb.	.02⅝	@ .02⅞
Inner tubes, No. 2, compounded	lb.	.01⅝	@ .01½
Inner Tubes, Red	cwt.	1.40	@ 1.50
Air Brake Hose	ton	9.00	@10.00
Rubber Hose	ton	3.50	@ 9.00

Cotton

THE severe drop in cotton prices in the last two weeks has somewhat disturbed the market from a rubber industry standpoint. Heretofore it has been slightly over a six-cent level. Lack of demand, coupled with unfavorable Government reports has developed a bearish tendency. Export sales, by their absence, also helped to depress the market. Mills are proceeding cautiously, and in most cases are continuing to curtail operations.

High, low, and closing prices on the New York Cotton Exchange as of May 4th, are gives as follows:

	High May 4	Low May 4	Close May 4	Close Apr. 20
May	5.54	5.54	5.54	6.11
July	5.72	5.56	5.63	6.30
Oct.	——	5.98	5.81	5.88

Tire Fabrics

No change has been made in the general range of prices of tire fabrics. In spite of restricted demand, price levels have been maintained. It is reported that the lower raw cotton prices may soon be reflected in tire fabric prices, but it is yet too early to note this effect.

Late prices follow:

(Prices Net at the Mill)

CORD				
Peeler, carded, 23/4/3	lb.	.24	@	.24¼
Peeler, carded, 23/5/3	lb.	.23	@	.23¼
Peeler, carded, 13/3/3	lb.	.20	@	.20¼
Peeler, carded, 15/3/3	lb.	.21	@	.21¼
Egyptian, carded, 23/5/3	lb.	.35	@	.35½
Egyptian, combed, 23/5/3	lb.	.40	@	.40½
CHAFERS				
Carded, American, 8 oz.	lb.	.18	@	.19
Carded, American, 10 oz.	lb.	.18	@	.19
Carded, American, 12 oz.	lb.	.18	@	.19
Carded, American, 14 oz.	lb.	.17	@	.18
LENO BREAKER				
Carded, American, 8¼ oz.	lb.	.18	@	.22
Carded, American, 10¼ oz.	lb.	.18	@	.22
SQUARE WOVEN				
Carded, American, 17¼ oz. 23-11 ply	lb.	.23	@	.24
Carded, American, 17¼ oz. 10 ply	lb.	.17	@	.17½

Sheetings

Restricted buying interests have dominated this market over the past two weeks but few price changes on the more important tire constructions have been reported in spite of raw cotton prices.

Late prices follow:

40 inch, 2.50 yard	yd.	.05¼	@	.05¾
40 inch, 2.85 yard	yd.	.04¾	@	.04¾
40-inch, 3.15-yard	yd.	.03⅞	@	.03½
40-inch, 3.60-yard	yd.	—	@	.04¾
40-inch, 3.75-yard	yd.	—	@	.04¼
40-inch, 4.25-yard	yd.	—	@	.03¾

Ducks

Latest quotations follow:

Enameling	lb.	.16¾	@	.17¾
Belting and Hose	lb.	.18	@	.18½
Single filling	lb.	.07¼	@	.07½
Double filling	lb.	.09¼	@	.09½

Closing Prices on Rubber Exchange of New York, Inc.

No. 1 Standard Contract of 10 Tons

FROM APRIL 21 TO MAY 5, 1932

Date		Spot	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Sales
April	21	3.08	3.02	3.06	3.12	3.18	3.23	3.29	3.35	3.40	3.45	3.50	3.55	3.60	—	139
	22	3.00	2.96	3.00	3.06	3.13	3.18	3.24	3.30	3.35	3.40	3.46	3.51	3.56	——	120
	23	3.00	2.97	3.01	3.06	3.11	3.18	3.25	3.30	3.35	3.40	3.46	3.51	3.57	——	84
	25	3.06	2.98	3.02	3.08	3.14	3.21	3.28	3.34	3.39	3.44	3.50	3.55	3.60	——	44
	26	3.06	2.98	3.02	3.07	3.12	3.19	3.26	3.32	3.37	3.42	3.47	3.53	3.59	——	73
	27	3.06	3.00	3.04	3.10	3.17	3.23	3.29	3.36	3.41	3.47	3.52	3.57	3.62	——	40
	28	3.10	——	3.10	3.14	3.19	3.26	3.33	3.40	3.46	3.53	3.58	3.63	3.68	——	85
	29	3.00	——	3.01	3.06	3.12	3.19	3.26	3.32	3.37	3.42	3.48	3.54	3.60	——	92
	30	3.00	——	2.95	3.02	3.09	3.15	3.20	3.26	3.32	3.39	3.44	3.49	3.54	——	42
May	2	2.97	——	2.95	3.01	3.08	3.14	3.20	3.27	3.34	3.41	3.44	3.48	3.52	3.62	74
	3	3.25	——	3.23	3.29	3.35	3.40	3.44	3.50	3.57	3.65	3.70	3.75	3.80	3.88	95
	4	3.45	——	3.42	3.47	3.52	3.56	3.60	3.66	3.71	3.76	3.83	3.89	3.95	4.05	225

CHEMICALS

RUBBER plants continue to proceed with caution in their purchases of compounding materials. Production schedules are still low, no appreciable change being noted in any of the leading divisions of the industry. Some hope for a favorable inventory balance is expected in some quarters, based on the proposed import tax of five cents per pound on crude rubber. This is likely to be a deciding factor in a possible increase in consumer prices. Quotations follow:

ACCELERATORS

Organic			
A-1	lb.	.24 @	.27
A-5-10	lb.	.33 @	.36
A-7	lb.	.55 @	.59
A-11	lb.	.62 @	.66
A-16	lb.	.57 @	.61
A-19	lb.	.58 @	.62
A-20	lb.	.64 @	.68
A-32	lb.	.80 @	.95
Aldehyde ammonia, crystals	lb.	.65 @	.70
Altax	lb.		
Captax	lb		
Cryiene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolyguanidine	lb.	.42 @	.44½
Diphenylguanidine	lb.	.30 @	.32½
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde aniline	lb.	.37½@	.40
Heptene	lb.	.40 @	—
Hexamethylene-tetramine	lb.	.58½@	.61
Lithex	lb.	.18 @	.20
Methylenedianiline	lb.	.37½@	.40
Monex	lb.	3.25 @	—
Oxynone	lb.	.68 @	.80
Phenex	lb.	.50 @	.55
R & H 40	lb.	.40 @	.41
R & H 50	lb.	.40 @	.41
R & H 397	lb.	.75 @	.76
R-2	lb.	1.95 @	2.15
Safex	lb.	1.20 @	1.25
SPDX	lb.	.75 @	—
Super-Sulphur No. 1	lb.		
No. 2	lb.		
Tensilac, No. 39	lb.	.40 @	.42½
Tensilac, No. 41	lb.	.50 @	.52½
Thermio F	lb.	.50 @	.55
Thiocarbanilid, drums	lb.	.20 @	.22
TMTT	lb.	3.00 @	3.25
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.58 @	.60
Tuads	lb.		
Ureka	lb.	.75 @	1.00
Vulcanex	lb.		
Vulcone	lb.		
Vulcanol	lb.		
Z-88-P	lb.	.50 @	.60
Zimate	lb.		
Inorganic			
Lead, sublimed blue	lb.	.08¼@	—
Lead, white	lb.	.08½@	.08¾
Litharge, domestic	lb.	.06¼@	.07
Magnesia, calcined, light	per 100 lb.	5.35 @	5.45
heavy	per 100 lb.	3.65 @	3.75

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.35 @	.36
Ultramarine	lb.	.06 @	.32
Browns			
Sienna, Italian	lb.	.05½@	.12½
Umber, Turkey	lb.	.04½@	.07
Greens			
Chrome, light	lb.	.30 @	.32
medium	lb.	.31 @	.33
dark	lb.	.34 @	.36
Chromium Oxide, bbl.	lb.	.34½@	.35½
Reds			
Antimony crimson, 15/17	lb.	.40 @	.44
sulfur, free	lb.	.56 @	.66
golden, 15/17 F.S.	lb.	.20 @	.25
Indian English	lb.	.08 @	.11
Domestic (Maroon)	lb.	.11 @	—
Red oxide, pure	lb.	.10 @	.12
Rub-Er-Red, f.o.b. Easton	lb.	.08¾@	—
Whites			
Lithopone, Albalith	lb.	.04½@	.04¾
Lithopone, Azolith	lb.	.04½@	.04¾
Titanium oxide	lb.	.21 @	—
Titanox B	lb.	.06½@	.07
Titanox C	lb.	.06½@	.07
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.05¾@	.06
ZZ (leaded)	lb.	.05½@	.05¾
Horsehead Lead Free Brand:			
Selected	lb.	.05¾@	.06
Special	lb.	.05¾@	.06
XX Red	lb.	.05¾@	.06
XX	lb.	.05¾@	.06
XX Green	lb.	.05¾@	.06
Leaded Brand, Standard	lb.	.05½@	.05¾
Sterling	lb.	.05½@	.05¾
Superior	lb.	.05½@	.05¾
Lehigh	lb.	.05¼@	.05½
U. S. P., bbls.	lb.	— @	.12¾
Kadox, black label	lb.	.09⅝@	.09⅞
Blue label	lb.	.08⅝@	.08⅞
Red label	lb.	.07¼@	.07½
Cryptone, No. 19	lb.	.06½@	.06¾
Cryptone CB, No. 21	lb.	.06½@	.06¾
XX Zinc Sulphide, bbls.	lb.	— @	.13
St. Joe, black label	lb.	.05¾@	.06
green label	lb.	.05¾@	.06
red label	lb.	.05¾@	.06
Zinc Oxide—French Process			
Anaconda, lead free	lb.	.05¾@	.06
Anaconda, selected lead free	lb.	.06¼@	.06½
Florence White seal, bbls.	lb.	— @	.10⅞
Green seal	lb.	.09⅝@	.09⅞
Red seal	lb.	.08⅝@	.08⅞
Yellows			
Chrome	lb.	.16½@	.17
Ocher, domestic	lb.	.01⅝@	.02

BLACKS

Arrow "Aerfloted"			
c.l. f.o.b. works, bags	lb.	.03 @	—
c.l. f.o.b. work, cases	lb.	.04½@	—
less c.l. f.o.b. works	lb.	.05½@	.07
Bone, powdered	lb.	.05½@	.12½
Carbon, compressed	lb.	.03 @	.07
uncompressed	lb.	.03 @	.07
"Certified," Cabot			
c.l. f.o.b. works, bags	lb.	.03 @	—
c.l. f.o.b. works, cases	lb.	.04½@	—
less c.l. f.o.b. works	lb.	.05½@	.07
"Disperso" f.o.b. La.	lb.	.031 @	.071
f.o.b. Texas	lb.	.03 @	.07
Drop, bbls.	lb.	.05½@	.14
"Excello," compressed	lb.	.04 @	.08
"Fumonex"	lb.	.02½@	.06
"Gastex"	lb.	.02½@	.06
Lampblack	lb.	.07 @	.10
"Micronex"			
c.l. f.o.b. works, bags	lb.	.03 @	—
c.l. f.o.b. works, cases	lb.	.04½@	—
less c.l. f.o.b. works	lb.	.05½@	.07
"Supreme"	lb.	.03 @	.07
Thermatomic—"P 33"	lb.	—	—
"Thermax"	lb.	—	—
United, "Dixie" and "Kosmos"			
c.l. f.o.b. works, bags	lb.	.03 @	—
c.l. f.o.b. works, cases	lb.	.04½@	—
less c.l. f.o.b. works	lb.	.05½@	.07
"Velvetex"	lb.	.02 @	.05

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate, lump	lb.	.10½@	.12
Asbestine	ton	13.40 @	14.00
Barium carbonate	ton	56.50 @	57.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color	ton	12.00 @	18.00
Western prime white	ton	33.00 @	—
Basofor	lb.	.04½@	—
Bentonite	lb.	.02 @	.03
Blanc fixe dry f.o.b. works	ton	75.00 @	90.00
Carrara filler	lb.	.01¾@	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk, precipitated			
Suprex white, extra lt.	ton	60.00 @	70.00
heavy	ton	45.00 @	55.00
Clay, Kaolin, domestic	ton	8.00 @	9.00
Aerfloted, Suprex	ton	6.50 @	8.00
Congaree	ton	9.00 @	—
Dark Blue Ridge	ton		
Dixie	ton		
Langford	ton		
Lexington	ton	10.00 @	22.00
Par	ton		
Tensulite		15.00 @	—
Glues, extra white	lb.	.20 @	.25
medium white	lb.	.16 @	.20
Kalite No. 1	ton	30.00 @	60.00
Kalite No. 3	ton	40.00 @	70.00
Magnesia, carbonate	lb.	.08¾@	.11
Mica	lb.	.04½@	—
Rotten Stone (powdered)	lb.	.02 @	.05
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	— @	2.57
Talc, domestic	ton	12.00 @	15.00
Pyrax A	ton		
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	1.70
Sussex	ton		
Witco	ton	20.00 @	—
Zinc Carbonate	lb.	.09½@	.10½
Zinc Stearate	lb.	.18½@	.22

MINERAL RUBBER

Genasco (factory	ton	40.00 @	42.00
Granulated M. R.	ton		
Hard Hydrocarbon	ton		
Parmr, solid	ton	28.00 @	48.00
Pioneer. MR, solid	ton	40.00 @	42.00
Pioneer-granulated	ton	50.00 @	52.00
R & H Hydro-Carbon	ton	27.05 @	29.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulfuric, 66 degrees	cwt.	1.60 @	1.95
Tartaric, crystals	lb.	— @	.26½
Acids, Fatty			
Laurex	lb.	.15 @	.16
Stearex	lb.	.13 @	.17
Stearic, double pressed	lb.	.17 @	.22
Alkalies			
Caustic soda, 76%	cwt.	2.90 @	—
Soda ash, 58% C.L.	cwt.	1.17½@	—
Oils			
Corn, refined, bbls.	lb.	.07 @	.08¾
Cottonseed, crude		— @	.04½
Cycline	gal.	.27 @	.34
Degras (c.l. 100 bbls.)	lb.	.03¾@	—
Less c.l. (10-25 bbls.)	lb.	.04 @	—
Lots less than 10 bbls.	lb.	.04¼@	.04½
Fluxrite	lb.	.05½@	.06½
Palm Lagos	lb.	.04 @	.05
Niger	lb.	.03½@	.04
Para-Flux	gal.	.17 @	—
Petrolatum, white	lb.	.08 @	.08½
Pigmentaroil	gal.	.18 @	.28
Pine, steam distilled	gal.	.54 @	.61
destructively distilled	gal.	.54 @	.55
Witco Palm Oil	lb.	.07½@	—
Witco Softener (f.o.b. wks.)	lb.	.02 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07½
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt. bbl.		7.00 @	—
Rosin, grade K, 280 lb. bbl.		— @	4.60
Pigmentar	gal.	.18 @	.28
Tar Retort, 50 gal.	bbl.	13.50 @	15.00
Solvents			
Acetone, pure	lb.	— @	.10
Alcohol, denatured, No. 1 bbls.	gal.	.28 @	.29
Benzol, 90%	gal.	.20 @	.21
Carbon, bisulfide	lb.	.05½@	.06⅛
Carbon, tetrachloride	lb.	.06¼@	.07
Dryolene (f.o.b. Okla.)	gal.	.10 @	.10½
Gasoline, steel bbls.	gal.	.16 @	—
Naphtha, solvent	gal.	.26 @	.28
Rub-Sol (f.o.b. Okla.)	gal.	.09 @	—
Turpentine, spirits	gal.	— @	.37½
wood	gal.	— @	.40
destructively distilled	gal.	.35 @	—
Waxes			
Beeswax, white	lb.	.34 @	.36
Carnauba	lb.	.26 @	.28
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06½@	.07
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffin (c.l.—f.o.b. N. Y.)			
Yellow crude scale	lb.	.02½@	—
White crude scale 124/126	lb.	.02½@	—
Refned, 125/127	lb.	.03⅝@	—
Refined, 128/130	lb.	.03¾@	—
Refined, 135/137	lb.	.05¼@	—
Refined, 138/140	lb.	.07¼@	—

ANTI-OXIDANTS

AgeRite, Gel	lb.		
Powder	lb.		
Resin	lb.		
White	lb.		
Albasan	lb.	.70 @	.75
Antox	lb.		
B-L-E	lb.	.57 @	.60
Neozone	lb.		
Oxynone	lb.	.68 @	.80
Resistox	lb.	.54 @	.57
Retardex	lb.	.35 @	.40
Stabilite	lb.	.57 @	.62
Stabilite Alba	lb.	.70 @	.75
VGB	lb.	.55 @	.66

SPECIALTIES

Aromatics—Rodo	lb.		
Sunproof	lb.	.35 @	.37½
Sponge Paste	lb.	— @	.30
Tonox	lb.	.56 @	.60

SUBSTITUTES

Black	lb.	.07 @	.09
White	lb.	.08 @	.14
Brown	lb.	.07 @	.11

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½@	.04½
Sulfur flour,			
Ref'n'd, 100% pure (bags)	cwt.	2.40 @	2.75
Commercial (bags	cwt.	1.75 @	2.10
Telloy	lb		
Vandex	lb		

TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

CRUDE rubber consumption dropped sharply in March while imports unexpectedly rose, leaving the statistical position, as far as stocks are concerned, very much in the same position as before. Market prices on both the London and New York exchanges remained fairly firm during the month of April, with no real buying interest to stimulate a rise in price levels.

Tire manufacturers are proceeding with caution and have not advanced their production schedules appreciably. Factory shipments have not come up to expectations and inventories again showed an increase at the beginning of March. The long-awaited revival in automobile production has not arrived, the car production in March being only slightly over that in February. There was also a falling off in rim production in March.

Latest figures covering imports and exports of crude rubber from the leading producing and consuming markets have been added to the appropriate tables in this section.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available.

Table of Contents

United States Rubber Imports and Exports
Rubber Consumption in the United States
United States Consumption of Gasoline
Daily Rubber Prices in New York
Monthly and Annual Rubber Prices
London Official Rubber Prices
Daily Cotton Prices in New York
Stocks of Crude Rubber in the U. S.
Rubber in London and Liverpool
Rubber in Singapore and Penang
Rubber at Other Centres
Rims Inspected and Passed in the U. S.
United States Tire and Tube Statistics
Automobile Production—U. S. and Canada
Rubber Exports from Producing Countries
Rubber Imports into Consuming Countries
Production of Misc. Rubber Goods
Imports of Guayule, Liquid Latex, etc.
Consumption, etc., of Reclaimed Rubber

U. S. Imports and Exports of Crude Rubber

YEARS	Gross Imports: Long Tons	Gross Imports: Total Declared Value	Gross Imports: Average Declared Value per pound Cents	Re-exports: Long Tons	Re-exports: Total Declared Value	Re-exports: Average Declared Value per pound Cents	Net Imports: Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,231	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1927	426,258	339,874,774	35.60	27,775	24,735,488	39.76	398,483
1928	439,731	244,854,973	25.03	32,159	18,128,361	25.17	407,572
1929	560,084	239,178,783	19.15	36,485	16,868,733	20.64	523,599
1930	482,082	139,134,330	12.89	30,205	9,316,205	13.77	451,877
1931	497,138	72,918,949	6.54	25,595	4,255,572	7.42	471,543
1930:							
Jan.	47,496	17,793,563	16.72	3,144	1,077,415	15.30	44,352
Feb.	42,687	14,798,240	15.48	2,280	960,790	18.80	40,407
Mar.	44,976	14,653,243	14.54	3,187	1,192,708	16.71	41,789
Apr.	45,423	14,783,605	14.53	2,688	892,532	14.82	42,735
May	42,692	13,373,232	13.98	3,154	1,085,432	15.37	39,538
June	39,993	12,215,848	13.79	3,174	1,028,653	14.47	36,819
July	35,182	10,553,944	13.39	2,807	759,260	12.08	32,375
Aug.	35,713	9,666,362	12.08	2,357	655,773	12.42	33,356
Sept.	35,380	8,460,812	10.68	1,514	430,772	12.70	33,866
Oct.	46,069	9,893,980	9.59	2,432	419,325	7.70	43,637
Nov.	29,401	5,700,086	8.66	1,300	271,348	9.32	28,101
Dec.	37,300	7,175,242	8.59	2,168	542,197	11.17	35,132
1931:							
Jan.	36,307	7,190,591	8.84	1,706	350,480	9.17	34,601
Feb.	34,005	6,564,969	8.62	1,799	357,078	8.86	32,206
Mar.	40,393	7,356,505	8.13	2,800	534,180	8.52	37,593
Apr.	44,536	7,712,941	7.73	2,607	528,947	9.06	41,929
May	35,526	5,886,638	7.40	2,501	418,301	7.47	33,025
June	46,233	6,918,900	6.68	2,749	440,604	7.15	43,484
July	43,469	6,023,748	6.19	1,435	223,587	6.96	42,034
Aug.	38,669	5,138,404	5.93	2,324	345,953	6.65	36,345
Sept.	38,494	4,970,324	5.76	1,362	187,431	6.14	37,132
Oct.	41,131	4,803,582	5.21	1,527	203,574	5.95	39,604
Nov.	43,435	4,742,218	4.72	1,403	198,284	6.31	43,435
Dec.	53,536	5,610,129	4.68	2,462	326,382	5.91	51,070
1932:							
Jan.	33,221	3,387,505	4.55	1,524	185,466	5.43	31,697
Feb.	27,959	2,690,250	4.29	1,915	222,584	5.19	26,044
Mar.	45,197	4,251,801	4.19	2,227	240,128	4.84	42,970
April							
May							

U. S. Consumption of Crude Rubber

(Rubber Manufacturers' Association statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

Jan.	29,638	32,196	31,518	34,403	43,002	36,194	28,557	27,962
Feb.	29,761	31,136	30,137	33,702	41,594	33,302	28,797	27,828
Mar.	33,498	32,936	36,141	35,688	44,730	35,540	32,788	——
Apr	34,139	32,696	35,871	32,772	47,521	39,686	33,321	——
May	35,322	29,364	34,592	37,333	49,233	39,386	37,817	——
June	35,822	28,598	33,801	37,676	43,227	34,195	37,916	——
July	36,053	27,577	29,219	37,407	41,526	29,508	31,937	——
Aug.	35,909	34,533	33,460	42,927	38,274	30,850	27,586	——
Sept	31,691	32,904	27,214	39,882	34,707	25,515	23,638	——
Oct.	29,047	29,936	26,790	40,857	34,800	27,516	22,277	——
Nov.	28,253	28,080	26,792	37,461	27,659	23,691	22,943	——
Dec.	28,748	26,293	25,492	31,232	23,531	21,687	21,409	——
Totals	388,481	366,149	371,027	441,340	469,804	375,980	348,986	——

Figures on Quarterly Basis

Quarter	1925	1926	1927	1928	1929	1930	1931	1932
Jan./Mar.	95,263	94,301	99,216	103,558	128,565	101,610	89,652	——
Apr./June	104,099	87,109	103,242	103,500	139,292	112,229	107,755	——
July/Sept.	99,493	93,793	89,210	117,573	113,746	85,261	83,632	——
Oct./Dec.	85,789	83,212	80,860	117,597	84,872	72,020	65,645	——
Totals	384,644	358,415	372,528	442,227	466,475	371,120	346,684	——

Note—The Rubber Association estimates its monthly rubber consumption figues to be 80 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

U. S. Consumption of Gasoline

(In Thousands of Barrels of 42 Gallons)

	1930	1931	1932		1930	1931	1932
January	25,731	26,844	26,845	July	38,256	39,459	——
February	26,509	26,133	25,508	August	37,433	39,459	——
March	31,029	31,037	——	September	37,823	36,670	——
April	34,549	33,400	——	October	32,267	35,051	——
May	36,497	35,716	——	November	30,984	30,640	——
June	35,902	38,375	——	December	29,094	30,529	——

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1930																																
January	—	15⅞	15⅝	15⅝	—	15⅝	15⅝	15	14⅞	14½	14⅝	—	—	14⅞	14⅝	14⅞	15½	15½	—	14¾	14⅞	14⅞	15¼	15¼	15¼	15⅝	15⅝	15¼	15¼	15¼	—	15¼
February	—	—	15	15	15¼	15⅝	15½	15½	—	15⅞	16	—	—	15⅞	15⅞	16⅛	16⅛	16⅝	16½	16⅞	16½	—	—	16½	16	16	15¾	15¾	15¾	—	—	15⅞
March	15⅝	—	15⅝	15⅝	15	15⅛	15⅝	15⅝	—	15⅝	15⅝	15	15½	15⅞	15⅛	15	15	15⅝	15⅛	15¼	15	15½	—	15⅝	15⅝	15⅝	15⅝	15⅞	15⅝	—	15⅝	15⅝
April	—	15½	15½	15¼	—	15¼	15¼	15¼	15⅛	15⅝	15⅛	15	—	14⅞	15⅛	15	—	15⅛	15	—	15	15½	—	—	14⅞	15⅝	15⅝	15⅝	14⅝	14¼	15	15
May	—	14⅜	14⅜	14⅜	—	14¼	14¼	14¼	14⅜	14⅜	14⅜	14½	14⅜	14⅜	14⅜	14⅜	14¼	14⅛	—	13⅞	14	14¼	14¼	14¼	14¼	14¼	14¼	14	14	—	—	14¼
June	—	13⅞	13⅞	13⅜	13	13⅜	13⅜	—	12⅞	12⅞	—	12¼	12¼	12¼	12¼	12	12	12	—	11⅞	11⅞	12	12	12	12¼	12¼	12⅝	12⅝	—	—	12⅝	12½
July	—	12¼	12	—	—	12	—	11⅞	11⅜	11⅜	11⅜	11⅛	—	11⅛	11⅛	11¼	11⅛	11⅛	10⅞	—	10¾	11⅛	10⅞	10⅞	10⅞	10⅞	10⅞	10⅝	10⅝	10⅜	10½	11¼
August	—	10⅝	—	10½	10½	10½	10¼	10¼	10¼	10¼	10	9⅞	9⅞	9⅞	9⅞	9⅞	9⅞	9⅝	9½	9¾	9⅞	9⅞	9⅞	9⅞	9⅝	9⅝	9⅝	9⅝	9⅝	—	—	10
September	—	9⅝	9⅝	9⅝	9	8½	8¼	8¼	8⅛	8⅛	8⅛	8¼	8¼	8¼	8¼	8¼	8⅛	8⅛	8	—	8	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	8⅛	7⅞	7½	8¼	8¼
October	—	7½	8¼	8	—	7½	8	8	8	7⅞	7⅞	8	8	7⅞	8	8	7⅞	7⅞	8	8⅛	8	8	8	8	8	8	8	8	8	8	8	8
November	—	8¾	8⅝	8	—	8⅜	8⅝	8⅝	8⅝	8½	8½	9	9	9	9	9	9	9	9⅜	9⅝	9⅝	9¼	9¼	9¼	9¼	9¼	9¼	9¼	9¼	8⅞	8⅞	9
December	—	9½	9½	9¼	9¼	9¼	—	9⅝	9½	9½	9½	9¼	9¼	—	—	8⅞	8⅝	9	8⅝	8⅝	—	8½	8⅝	8⅝	—	8¾	8⅝	—	8½	8⅝	—	9
1931																																
January	—	8⅝	8⅝	—	8½	8⅝	8⅝	8⅝	8⅝	8⅝	—	8⅝	8⅝	8⅝	8½	8⅝	8⅝	8⅝	8⅛	8¼	8¼	8¼	8¼	8¼	8¼	8¼	8¼	8¼	8¼	8¼	—	8⅝
February	—	7¾	7⅞	—	7¾	7⅝	7⅝	—	7¾	8	7¾	—	7⅞	7⅞	—	7⅞	7⅞	7⅞	7⅞	7½	7½	—	—	7½	7½	7½	7½	7½	7½	7½	—	7¾
March	—	7¾	8	—	8¼	8¼	8¼	—	7⅞	8	7⅞	8	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7⅞	7¼	7⅜	7⅜	7¾	7¾	7¾	7¾	7¾	7¾	7¾	7¾	7¾	7¾
April	6⅞	—	—	6¼	6¼	6¼	6¼	6¼	6¾	6¾	6¾	6¾	6¾	6¾	6¾	6½	6½	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼
May	6	6	6	6	6	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼	6¼
June	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜
July	6⅜	6⅜	6⅜	6⅜	—	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜	6⅜
August	5¾	5¾	5¾	5¾	5¾	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½
September	5¼	5¼	5¼	5¼	5¼	5¼	—	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼	5¼
October	4¾	4¾	4¾	4¾	—	4¾	4¾	—	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
November	—	4½	—	4½	4½	4½	—	—	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾
December	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4¼	4¼	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜
1932																																
January	—	—	—	4½	4½	4½	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜	4⅜
February	4⅜	4¼	4¼	4¼	4¼	4¼	—	4¼	4¼	4¼	—	4¼	4¼	—	—	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼	4¼
March	3½	3½	3½	3½	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
April	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
May	—	—	—	3¼	3¼	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1925

Year	Cents	Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15	1922	17.50
1911	141.30	1915	65.85	1919	48.70	1923	29.45
1912	121.60	1916	72.50	1920	36.30	1924	26.20
1913	82.04	1917	72.23	1921	16.36	1925	72.46

Average Monthly Price per Pound Since 1926

Month	1926 Cents	1927 Cents	1928 Cents	1929 Cents	1930 Cents	1931 Cents	1932 Cents
Jan.	79.50	38.75	40.25	20.14	15.24	8.34	4.38
Feb.	62.25	38.25	32.75	23.97	15.85	7.70	4.03
Mar.	59.00	41.04	26.82	24.55	15.34	7.71	3.35
Apr.	51.25	40.86	18.97	21.18	14.93	6.43	3.02
May	47.75	40.76	18.99	21.46	14.24	6.49	—
June	42.50	37.25	19.59	20.64	12.45	6.35	—
July	41.03	34.87	19.40	21.30	11.24	6.37	—
Aug.	38.50	35.12	19.46	20.59	9.96	5.38	—
Sept.	41.00	33.67	18.47	20.37	8.28	5.08	—
Oct.	42.50	34.32	18.83	19.67	8.20	4.87	—
Nov.	38.50	37.58	18.26	16.62	9.01	4.65	—
Dec.	38.25	40.63	17.97	16.12	9.05	4.64	—
Average for Year	48.50	37.72	22.48	20.55	11.98	6.17	—

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Day	Feb.	Mar.	Apr.	May	Day	Feb.	Mar.	Apr.	May
1	27/8	2¼	1⅞	—	17	2⅝	2⅛	—	—
2	27/8	2¼	1⅞	1⅞	18	2⅝	2⅛	1⅞	—
3	2¾	2¼	—	2	19	2¾	2	1⅞	—
4	2¾	2⅝	1⅞	2	20	2¾	—	1⅞	—
5	2¾	2⅝	1⅞	—	21	—	1⅞	1⅞	—
6	2¾	—	1⅞	—	22	2¾	1⅞	1⅞	—
7	—	2⅝	1¾	—	23	2⅝	2	1⅞	—
8	2¾	2⅝	1¾	—	24	2⅝	2	—	—
9	2¾	2¼	1¾	—	25	2½	—	1⅞	—
10	2¾	2¼	—	—	26	2½	—	2	—
11	2¾	2⅝	1¾	—	27	2½	—	1⅞	—
12	2¾	2⅝	1⅞	—	28	—	—	2	—
13	2⅝	—	1⅞	—	29	2½	1⅞	2	—
14	—	2⅝	1⅞	—	30	—	1⅞	2	—
15	2¾	2¼	1⅞	—	31	—	1⅞	—	—
16	2⅝	2¼	1⅞	—					

Average Monthly Price Per Pound

Month	1929 Pence	1930 Pence	1931 Pence	1932 Pence	Month	1929 Pence	1930 Pence	1931 Pence	1932 Pence
Jan.	9.942	7.471	4.160	3.052	Aug.	10.505	4.880	2.385	——
Feb.	11.875	7.948	3.823	2.760	Sept.	10.160	4.075	2.524	——
Mar.	12.135	7.595	3.822	2.047	Oct.	9.620	4.023	2.898	——
Apr.	10.490	7.391	3.082	1.876	Nov	8.442	4.440	2.890	——
May	10.717	6.926	3.035	——	Dec.	7.958	4.516	3.115	——
June	10.580	6.195	3.082	——	Average for				
July	11.065	5.648	3.048	——	Year	10.291	5.926	3.155	——

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Mar.	Apr.	May	Day of Month	Mar.	Apr.	May	Day of Month	Mar.	Apr.	May
1	7.00	6.30	——	11	7.05	6.25	——	21	6.85	6.20	——
2	7.20	6.25	5.79	12	7.05	6.25	——	22	6.70	6.20	——
3	7.10	——	5.75	13	——	6.25	——	23	6.55	6.10	——
4	7.15	6.40	5.65	14	6.95	6.25	——	24	6.60	——	——
5	7.15	6.25	——	15	6.95	6.25	——	25	——	6.15	——
6	——	6.10	——	16	6.95	6.20	——	26	——	6.15	——
7	7.10	6.05	——	17	7.60	——	——	27	——	6.25	——
8	7.05	6.10	——	18	7.00	6.15	——	28	6.30	6.15	——
9	7.05	6.20	——	19	6.95	6.10	——	29	6.20	5.85	——
10	7.05	——	——	20	——	6.20	——	30	6.40	5.60	——
								31	6.20	——	——

Average Monthly Price Per Pound

Month	1929 Cents	1930 Cents	1931 Cents	1932 Cents	Month	1929 Cents	1930 Cents	1931 Cents	1932 Cents
Jan.	20.22	17.21	10.27	6.65	Aug.	18.62	12.03	7.21	——
Feb.	20.21	15.62	10.96	6.85	Sept.	18.83	10.85	6.52	——
Mar.	20.19	15.13	10.90	6.86	Oct.	18.46	10.63	6.32	——
Apr.	20.29	16.39	10.19	6.16	Nov.	17.53	10.96	6.44	——
May	19.41	16.43	9.38	——	Dec.	17.28	10.02	6.24	——
June	18.74	14.48	9.05	——	Average for				
July	18.62	13.10	9.28	——	Year	19.03	13.57	8.56	——

World Stocks of Crude Rubber

ON HAND OR AFLOAT TO THE U. S.

At End of	ON HAND 1930	ON HAND 1931	ON HAND 1932	AFLOAT 1930	AFLOAT 1931	AFLOAT 1932	ON HAND AND AFLOAT 1930	ON HAND AND AFLOAT 1931	ON HAND AND AFLOAT 1932
Jan.	131,744	209,487	322,860	61,863	56,187	42,234	193,607	265,674	365,094
Feb.	143,863	212,833	322,117	63,404	63,680	51,728	207,267	276,513	373,845
Mar.	141,843	217,804	334,566	63,646	63,133	44,190	205,489	280,937	378,756
Apr.	148,272	228,382	———	63,261	56,700	———	211,533	285,082	———
May	146,179	220,799	———	68,168	73,564	———	214,347	294,363	———
June	151,551	225,536	———	58,657	69,421	———	210,209	294,957	———
July	152,001	234,822	———	58,326	66,873	———	210,327	301,695	———
Aug.	158,604	240,816	———	61,168	61,469	———	219,772	302,285	———
Sept.	169,927	254,324	———	60,923	62,420	———	230,851	316,744	———
Oct.	185,470	273,456	———	51,122	68,427	———	236,593	341,883	———
Nov.	189,925	292,493	———	52,538	77,443	———	242,463	369,936	———
Dec.	200,998	322,826	———	56,035	53,940	———	257,033	376,766	———

(Rubber Manufacturers' Association figures raised to 100%)

STOCKS IN GREAT BRITAIN

Stocks in London

(No. of Tons in Wharves and Warehouses, including Latex)

At end of	1930	1931	1932	At end of	1930	1931	1932
Jan.	60,434	81,093	67,166	July	81,048	81,317	———
Feb.	64,557	82,265	65,942	Aug.	80,931	81,560	———
Mar.	68,923	84,736	64,280	Sept.	83,329	79,692	———
Apr.	74,676	86,982	———	Oct.	77,647	76,778	———
May	77,312	86,726	———	Nov.	76,887	73,911	———
June	80,260	83,071	———	Dec.	78,013	69,470	———

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1931					
October	79,246	78,735	78,704	78,465	76,698
November	76,323	75,256	74,322	73,207	
December	72,904	72,785	71,400	70,043	
1932					
January	69,504	68,967	68,272	67,545	67,157
February	67,410	67,824	67,314	65,923	
March	65,459	65,121	65,014	64,461	
April	63,813	64,015	63,717	63,348	61,850

Stocks in Liverpool

1931					
October	54,677	55,518	55,276	55,797	56,816
November	56,284	55,933	56,339	56,366	
December	56,901	57,157	57,116	56,908	
1932					
January	57,718	57,652	58,662	58,328	58,182
February	59,155	59,874	59,514	59,868	
March	60,288	60,776	60,922	60,775	
April	61,010	60,872	61,302	61,433	61,480

STOCKS IN PENANG AND SINGAPORE

(Stocks held by Dealers—Quantities in Long Tons)

End of	1929	1930	1931	1932	End of	1929	1930	1931
Jan.	29,617	39,727	48,802	48,850	July	33,859	45,459	51,203
Feb.	32,373	44,371	49,283	46,954	Aug.	30,834	48,132	48,971
Mar.	29,437	45,657	49,590	46,591	Sept.	32,138	44,015	47,025
Apr.	26,474	48,473	45,868	———	Oct.	33,770	39,930	52,132
May	30,764	44,715	44,278	———	Nov.	30,963	41,674	46,497
June	30,403	42,451	47,517	———	Dec.	35,548	45,963	45,795

STOCKS IN OTHER CENTRES

1930 End of 1931:	Malaya Mainland	Afloat for Europe	Holland	Colombo	Para and Manaos
Jan.	41,620	24,500	3,168		5,124
Feb.	43,027	24,580	3,326		5,404
Mar.	40,227	21,990	3,622	3,857	4,843
Apr.	37,103	18,500	3,659		5,137
May	37,171	17,770	3,380		4,896
June	38,748	18,440	3,219	3,518	4,894
July	40,377	19,960	3,111		4,548
Aug.	40,606	18,880	3,204		4,571
Sept.	37,114	16,200	3,293	2,763	4,972
Oct.	35,381	17,800	3,100		5,465
Nov.	39,193	19,570	2,799		5,506
Dec.	41,219	20,140	2,568	3,607	5,576
1932:					
Jan.	43,938	20,000	3,065		6,342
Feb.	43,695				

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1923	23,140,020	0.6	1927	19,700,003	79.1
1924	21,863,311	19.7	1928	24,247,282	81.6
1925	26,001,664	66.8	1929	24,141,502	80.3
1926	24,199,524	73.8	1930	17,364,096	80.1
1931			1931		
January	681,301	67.9	July	812,642	74.0
February	1,010,774	73.9	August	924,236	80.8
March	1,425,336	81.4	September	504,879	70.4
April	1,717,652	79.9	October	281,749	62.7
May	1,508,349	83.7	November	638,138	78.0
June	1,084,707	77.8	December	714,037	80.1
1932			1932		
January	810,759	89.0	March	648,013	81.6
February	726,172	84.3			

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1924	1925	1926	1927	1928	1929	1930	1931
Production	51,633	60,845	61,237	64,439	77,944	68,726	50,965	48,739
Shipments	50,120	59,262	59,002	64,059	74,296	69,395	53,638	48,151
Inventory[2]	7,427	8,142	10,456	10,264	13,624	11,838	9,003	110,233

Figures for Recent Months

	PRODUCTION 1930	1931	1932	SHIPMENTS 1930	1931	1932	INVENTORY 1930	1931	1932
Jan.	4,485	3,675	3,462	4,406	3,744	3,253	11,925	8,957	7,912
Feb.	4,555	3,985	3,871	4,195	3,402	2,553	11,410	9,536	9,172
Mar.	4,863	4,663	———	4,717	4,122	———	12,513	10,014	———
Apr.	5,648	4,944	———	5,089	4,932	———	13,076	10,031	———
May	5,717	5,679	———	5,216	5,415	———	13,432	10,312	———
June	5,122	5,672	———	5,294	5,572	———	13,277	10,447	———
July	3,991	4,926	———	5,447	5,462	———	11,812	9,919	———
Aug.	4,166	3,906	———	5,175	4,960	———	10,848	8,896	———
Sept.	3,365	3,172	———	4,405	3,932	———	9,812	8,158	———
Oct.	3,582	2,974	———	3,499	2,852	———	9,803	8,300	———
Nov.	2,654	2,500	———	2,834	2,887	———	9,595	7,919	———
Dec.	2,814	2,643	———	3,361	2,871	———	9,003	7,744	———

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1924	1925	1926	1927	1928	1929	1930	1931
Production	70,706	82,614	76,618	70,823	80,180	68,829	52,420	48,333
Shipments	68,106	81,004	71,591	72,896	77,127	70,592	54,938	50,021
Inventory[2]	11,052	11,313	16,200	13,692	16,117	12,807	9,999	112,121

Figures for Recent Months

	PRODUCTION 1930	1931	1932	SHIPMENTS 1930	1931	1932	INVENTORY 1930	1931	1932
Jan.	4,607	3,623	33,981	4,857	4,062	35,292	12,704	9,439	77,188
Feb.	4,634	3,916	38,212	4,337	3,400	27,280	13,036	9,921	87,598
Mar.	4,941	4,450	———	4,727	3,789	———	13,179	10,475	———
Apr.	5,510	4,617	———	4,848	4,636	———	13,784	10,413	———
May	5,535	5,413	———	5,074	5,281	———	13,852	10,549	———
June	4,950	5,358	———	5,265	5,397	———	13,612	10,504	———
July	3,939	4,955	———	5,855	5,831	———	11,657	9,589	———
Aug.	4,796	4,435	———	5,762	5,301	———	10,737	8,774	———
Sept.	3,817	3,449	———	4,541	4,150	———	10,065	8,095	———
Oct.	3,951	3,077	———	3,472	2,813	———	10,517	8,321	———
Nov.	2,680	2,443	———	2,788	2,594	———	10,313	8,119	———
Dec.	3,060	2,597	———	3,412	2,767	———	9,999	7,922	———

(1) Rubber Manufacturers' Association figures, raised to 100%. The Association estimates its figures to be 75% complete up until 1929 and 80% complete beginning with 1929, and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	United States Total	Passenger Cars	Trucks	Canada Total	Passenger Cars	Trucks	Grand Total
1926	4,298,799	3,808,753	490,046	205,002	164,483	40,609	4,503,891
1927	3,393,887	2,988,868	453,019	179,426	146,850	32,556	3,573,313
1928	4,357,384	3,826,613	530,771	242,382	196,737	45,645	4,599,944
1929	5,358,420	4,587,400	771,020	263,295	207,498	55,797	5,621,715
1930	3,355,986	2,814,452	540,534	154,192	125,442	28,750	3,510,178
1931							
Jan.	171,848	138,317	33,531	6,496	4,552	1,944	178,344
Feb.	219,940	180,419	39,521	9,871	7,529	2,342	229,811
Mar.	276,405	231,244	45,161	12,993	10,483	2,510	289,398
Apr.	336,939	285,693	50,015	17,159	14,043	3,116	354,098
May	317,163	269,420	45,695	12,738	10,621	2,117	329,901
June	250,640	208,158	41,304	6,835	5,583	1,252	257,475
July	218,490	183,107	35,854	4,220	3,151	1,069	222,710
Aug.	187,197	155,425	31,772	4,544	3,426	1,118	191,741
Sept.	140,566	109,228	31,338	2,646	2,108	538	143,212
Oct.	80,142	58,415	21,727	1,440	761	679	81,582
Nov.	68,867	49,184	19,683	1,247	812	435	70,114
Dec.	121,533	97,897	23,636	2,432	408	2,024	123,965
Total	2,389,730	1,973,090	416,640	82,621	63,477	19,144	2,472,351
1932							
Jan.	119,344	98,785	20,541	3,731	3,112	619	123,075
Feb.	117,418	94,110	23,308	5,477	4,494	983	126,621
Mar.	118,959	99,399	19,560	8,318	6,604	1,714	127,277

Exports of Crude Rubber from Principal Producing Countries

(Long Tons)

	BRITISH MALAYA[1]							DUTCH EAST INDIES[3]							
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[2]	India & Burma[3]	Sarawak[4]	British North Borneo[5]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[5]	Amazon Valley	All Other[6]	World Total[7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,415
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	514,487
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,580
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	15,633	606,474
1928	409,430	149,787	259,643	57,267	10,790	10,087	6,695	4,813	58,848	82,511	121,770	9,548	21,129	10,690	653,794
1929	574,836	163,092	411,744	81,584	11,663	11,077	7,381	5,018	65,990	87,789	134,037	9,696	21,148	6,767	853,894
1930	547,043	133,876	413,167	76,970	10,782	10,309	6,781	4,251	69,755	79,396	115,254	7,665	14,260	5,651	814,241
1930:															
Jan.	52,535	11,773	40,762	7,741	1,560	791	642	386	5,709	7,331	8,928	856	1,837	585	77,628
Feb.	48,947	12,960	35,987	8,055	1,245	847	642	469	6,900	7,191	11,414	944	1,787	480	75,961
Mar.	47,320	12,236	35,084	6,617	1,219	976	642	391	5,796	6,612	11,214	643	1,674	536	71,314
Apr.	43,803	14,627	29,176	4,444	856	1,026	502	366	4,802	6,326	12,724	433	1,201	630	62,486
May	49,016	13,253	35,763	5,968	975	917	502	350	6,352	6,661	12,041	753	1,383	555	72,220
June	36,607	12,120	24,487	4,577	778	1,040	201	392	4,728	4,776	9,512	425	974	551	52,441
July	41,347	12,759	28,588	3,868	792	1,087	600	327	6,022	5,891	9,770	648	810	418	58,821
Aug.	47,802	10,304	37,498	7,077	600	740	600	335	5,892	7,197	9,520	394	809	382	71,044
Sept.	48,529	8,087	40,442	7,966	343	680	600	289	5,960	6,358	7,302	527	1,093	474	72,034
Oct.	47,770	7,312	40,458	7,681	591	598	650	300	5,916	6,956	6,352	667	669	449	71,287
Nov.	41,281	7,774	33,507	6,042	864	631	600*	311	5,334	6,401	8,001	654	658	238	63,241
Dec.	42,086	9,671	32,415	6,934	1,049	976	600*	335	6,254	7,196	8,476	721	1,365	353	66,674
1931:															
Jan.	41,579	11,029	30,550	7,039	1,315	770	542	424	5,923	7,348	10,328	1,218	994	295	66,746
Feb.	41,951	9,672	32,279	6,365	1,041	945	542	409	4,869	7,206	9,001	1,018	1,271	217	65,163
Mar.	48,589	12,009	36,580	5,881	1,209	930	542	536	5,434	7,104	11,258	1,233	1,338	430	72,475
Apr.	43,453	9,977	33,476	4,333	641	788	455	340	6,473	6,063	8,759	327	629	333	62,617
May	44,281	10,479	33,802	4,242	622	869	455	413	7,373	6,799	10,955	793	1,110	382	67,815
June	39,397	12,115	27,282	5,098	1,086	1,138	455	337	5,856	6,696	11,380	1,019	621	351	61,319
July	43,658	11,995	31,663	4,517	715	801	536	316	6,671	7,511	10,711	859	1,565	186	66,051
Aug.	42,832	9,063	33,769	3,763	406	692	535	210	6,397	7,044	8,641	1,097	856	241	63,651
Sept.	44,336	8,369	35,967	4,029	169	701	535	218	5,577	7,358	8,389	917	745	183	64,788
Oct.	45,911	9,955	35,956	5,547	286	872	500*	338	8,086	7,882	9,547	934	1,284	238	71,467
Nov.	48,012	9,529	38,483	4,609	408	830	500*	390	7,351	8,174	7,981	731	872	233	70,562
Dec.	35,741	11,314	24,427	6,346	572	1,115	500*	287	5,942	8,562	9,059	1,550	836	203	59,399
1932:															
Jan.	44,538	10,304	34,234	4,570	732	756	500*	457	5,155	8,815	8,703	1,000	831	200	65,197
Feb.	42,008	8,008	34,000	4,472		696		334				1,096	352		

(1) Malayan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, 3,263 in 1926, 2,439 in 1927, 1,437 in 1928, 2,670 in 1929, and 1,274 in 1930. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, 20 tons 1926, about ½ ton in 1927, and 1 ton in 1928, and practically none in 1929, 1930 and 1931. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, 44 tons in 1926, 84 tons in 1927, 1,459 tons in 1928, 1,302 tons in 1929, and 2,656 tons in 1930. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Belgium and Netherlands, and includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown when available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	United States[1]	United Kingdom	France (h)	Germany	Canada (ac)	Japan (da)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	288,407	42,671	17,685	5,584	6,395	9,758	9,894	75	1,002	3,995	2,771	3,149	2,418	9	343,808
1920	249,530	56,844	13,885	11,890	11,746	5,297	6,123	62	1,515	3,840	5,510	2,292	2,008	567	371,409
1921	179,736	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,636
1922	296,594	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	—3,807	1,778	589	567	396,222
1923	301,527	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	409,173
1924	319,103	—11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	—807	3,178	944	1,370	416,203
1925	385,596	4,061	32,956	33,937	19,688	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	520,274
1926	399,981	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	617,957
1927	403,472	60,249	34,271	38,892	26,405	20,521	11,381	12,018	9,490	6,482	636	4,224	2,055	2,672	632,768
1928	407,572	4,846	36,498	37,855	30,447	25,621	12,433	15,134	8,430	7,958	2,243	4,418	3,178	3,138	599,771
1929	528,608	122,675	55,093	49,275	35,453	34,284	17,169	11,774	15,886	9,445	3,022	6,440	864	4,650	894,638
1930	458,036	120,069	68,503	45,488	28,793	33,039	18,639	16,387	5,354	10,635	2,924	7,710	2,400	4,468	822,445
1930:															
Jan.	44,911	11,106	4,207	3,862	2,842	2,805	910	826	332	612	209	552	200*	577	73,951
Feb.	40,792	10,923	4,482	3,697	2,250	1,386	1,385	2,705	457	1,143	188	315	200*	289	70,162
May	40,012	9,862	5,233	4,379	2,593	2,699	1,279	1,153	975	678	358	322	200*	263	74,676
Apr.	43,036	13,058	5,006	4,488	2,303	2,769	2,067	929	673	1,431	158	461	200*	255	76,834
May	40,012	9,861	5,233	4,379	2,593	2,699	1,279	1,645	64	1,250	230	274	200*	282	70,002
June	37,374	9,645	4,458	3,794	2,579	2,677	1,378	1,574	67	691	343	507	200*	282	65,569
July	32,785	7,650	3,311	3,449	3,347	1,206	587	567	84	939	172	756	200*	342	55,395
Aug.	34,513	8,369	3,953	3,515	2,108	2,170	886	149	265	888	37	747	200*	450	58,256
Sept.	34,373	16,016	5,285	4,089	1,578	2,606	1,279	1,373	414	824	221	817	200*	411	69,486
Oct.	44,385	9,095	7,403	3,747	1,942	3,951	2,460	2,782	609	769	439	1,132	200*	351	79,265
Nov.	28,437	-250	13,662	3,074	2,128	4,003	2,510	2,140	464	596	364	1,180	200*	343	58,851
Dec.	35,202	12,249	7,149	3,105	1,347	4,104	2,815	544	950	814	205	647	200*	673	70,004
1931:															
Jan.	34,873	9,730	5,954	3,847	1,709	2,861	1,036	1,775	601	986	348	464	240	635	65,059
Feb.	32,572	12,226	4,510	3,374	1,927	3,264	1,393	1,022	495	785	157	476	201	366	62,768
Mar.	37,960	12,335	4,386	3,545	3,012	2,323	418	2,531	435	862	346	400	392	507	69,452
Apr.	42,212	9,440	4,346	3,054	2,070	3,478	528	1,450	457	515	333	495	208	324	68,910
May	33,271	8,212	2,880	3,231	2,748	3,755	1,023	1,054	884	1,153	86	495	180	711	58,663
June	43,730	5,636	4,002	3,504	2,112	2,988	1,462	3,279	1,112	1,058	272	577	207	607	70,546
July	42,293	5,366	3,301	3,226	2,592	3,065	809	3,141	627	1,507	41	429	145	1,074	67,816
Aug.	36,709	5,030	3,393	2,889	2,304	3,780	812	3,137	283	955	—57	321	160	413	60,129
Sept.	37,571	5,468	4,420	4,227	1,535	5,556	693	2,335	269	1,015	191	571	99	499	64,449
Oct.	39,820	5,775	3,909	3,220	1,567	3,980	571	4,076	765	792	185	710	193	695	66,258
Nov.	43,659	2,550	2,669	2,621	1,233	3,340	545	2,417	934	729	183	745	297	954	62,876
Dec.	51,323	4,402	2,696	2,950	2,452	5,093	859	4,474	787	652	135	677	283	932	77,715
1932:															
Jan.	32,028	5,065	2,588	3,303	1,746	5,782	627		622		479	840	462		
Feb.	26,483														

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—Official statistics of rubber imports by Soviet Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. [1]United States imports of guayule are included in this compilation. *Figure is provisional; final figure will be shown immediately it becomes available.

Domestic Production of Miscellaneous Rubber Goods

	Rubber Proofed Fabrics	Rubber Heels	Rubber Soles	Mechanical Goods Shipments
	Yards	Pairs	Pairs	Dollars
1924	25,020,000	186,279,000	(1)	$48,615,000
1925	23,988,000	206,970,000	16,211,620(2)	64,877,000
1926	29,328,000	183,312,000	12,253,000	76,789,000
1927	37,872,000	201,014,000	27,160,000	68,625,000
1928	41,179,000	235,170,000	37,645,000	69,114,000
1929	50,731,000	232,126,000	34,499,000	74,770,000
1930	42,681,000	178,059,000	29,514,000	58,465,000
1931:				
January	2,206,000	12,973,000	2,481,000	3,599,000
February	2,184,000	13,156,000	2,724,000	3,711,000
March	2,769,000	14,661,000	2,292,000	4,412,000
April	3,381,000	15,408,000	2,692,000	4,617,000
May	3,050,000	15,474,000	2,885,000	4,231,000
June	3,212,000	17,093,000	3,177,000	3,879,000
July	3,337,000	15,361,000	2,864,000	3,706,000
August	3,787,000	16,293,000	2,933,000	3,856,000
September	4,692,000	15,827,000	2,880,000	3,015,000
October	4,112,000	14,567,000	2,610,000	2,678,000
November	2,529,000	11,455,000	2,840,000	2,300,000
December	2,074,000	14,138,000	3,639,000	2,281,000
1932:				
January	———	12,317,000	3,411,000	
February		14,487,000	3,461,000	

(1) Not available; (2) Last 9 months only.
Source: "Survey of Current of Business of the Department of Commerce."

United States Imports of Guayule, Balata, Jelutong, Liquid Latex

(All quantities in Long Tons)

	Guayule		Balata		Jelutong		Liquid Latex (1)	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
1919	1,430	760,690	727	937,033	8,332	2,213,964	——	——
1920	758	345,985	1,064	1,260,043	5,672	2,068,501	——	——
1921	58	26,945	814	1,077,359	1,745	351,893	——	——
1922	127	57,040	812	978,765	2,335	403,812	——	——
1923	1,155	542,227	700	898,524	4,565	853,308	——	——
1924	1,356	536,392	464	568,456	6,165	1,237,100	2,157	864,059
1925	3,781	1,803,443	517	574,750	6,749	1,642,531	3,853	3,537,810
1926	4,305	2,562,096	354	327,213	7,263	3,127,757	3,288	4,680,386
1927	5,018	2,674,957	582	447,246	7,785	2,448,657	1,116	876,077
1928	3,075	1,755,685	781	430,855	7,552	2,540,959	4,167	2,185,579
1929	1,231	545,175	728	566,964	8,208	2,458,136	3,728	1,787,997
1930	1,096	347,388	501	422,684	5,907	1,403,244	4,449	1,506,804
1931	——	——	1,208	411,692	5,777	1,019,010	4,650	884,355
1931:								
Jan.	—	——	46	31,870	355	58,897	291	70,708
Feb.	—	——	17	13,801	511	114,100	369	89,470
Mar.	—	——	66	23,568	625	127,803	395	75,285
Apr.	—	——	219	69,284	676	140,309	372	73,867
May	—	——	120	44,025	205	36,086	318	82,202
June	—	——	245	79,786	681	123,616	706	129,496
July	—	——	67	20,777	331	64,493	583	104,868
Aug.	—	——	73	30,207	652	100,536	364	60,358
Sept.	—	——	126	35,174	407	65,232	439	72,443
Oct.	—	——	100	13,846	415	75,219	267	43,238
Nov.	—	——	36	11,539	276	50,062	265	40,649
Dec.	—	——	93	37,815	643	62,657	282	41,771
1932:								
Jan	—	——	54	14,095	633	81,396	331	40,613
Feb.	—	——	100	24,702	558	84,914	439	52,183
Mar.	—	——	114	20,628	460	59,299	391	44,585

(1) Latex import figures not available before 1924.

Reclaimed Rubber in the United States

(All Quantities in Long Tons)

	Consumption					Consumption			
Year	Production	Tons	% to Crude	Stocks*	Year	Production	Tons	% to Crude	Stocks*
1921	26,725	41,351	24.1	.....	1926	180,582	164,500	45.9	23,218
1922	57,324	54,458	19.3	.....	1927	189,144	178,471	47.6	24,980
1923	74,766	69,534	22.7	.....	1928	208,516	223,000	50.4	24,785
1924	80,079	76,072	22.4	.....	1929	218,954	226,582	48.4	27,464
1925	132,930	137,105	35.6	13,203	1930	157,967	153,497	40.8	22,000
1930:									
Jan.	15,010	17,454	47.6	24,241	July	12,322	12,384	42.3	23,273
Feb.	15,846	14,559	44.5	24,248	Aug.	12,047	10,985	35.9	22,980
Mar.	17,490	15,241	42.2	24,415	Sept.	11,433	10,480	41.4	21,996
Apr.	17,828	16,904	42.0	24,587	Oct.	12,349	10,724	39.3	21,145
May	17,812	17,052	42.7	23,356	Nov.	10,763	8,816	37.5	24,007
June	15,714	14,063	40.8	24,449	Dec.	10,073	8,449	39.3	24,008
1931:									
Jan.	10,349	10,728	37.6	22,429	July	11,393	11,447	35.8	17,720
Feb.	10,371	10,800	37.5	18,378	Aug.	10,110	9,972	36.2	17,165
Mar.	12,988	12,524	38.3	18,375	Sept.	9,629	8,932	37.6	17,226
Apr.	13,267	11,745	35.0	18,356	Oct.	9,482	8,126	36.6	17,741
May	13,478	13,103	34.6	18,088	Nov.	7,392	7,492	32.6	17,662
June	14,066	13,045	34.4	18,505	Dec.	8,876	6,812	31.8	19,257
1932:									
Jan.	8,753	8,440	30.2	18,712	Mar.	8,613	7,420	26.7	19,721
Feb.	8,731	8,332	27.7	18,659					

*Stocks on hand at the end of month or year. Exports of reclaimed rubber, not shown in this table, amounted to 8,540 tons in 1927, 9,577 tons in 1928, and 12,869 tons in 1929
(Rubber Manufacturers' Association figures raised to 100%)

REVIEW DESK

Books, New Publications, Catalogues, Etc.

COST ACCOUNTS IN RUBBER AND PLASTIC TRADES. By Thomas W. Fazakerley. Published by Isaac Pitman & Sons, New York City. 1932. 84 pp.

The volume is a comprehensive discussion of the vital points in the study of costs and cost accounting as applied to these two industries. Specimen forms for various accounting records are included. Separate chapters are devoted to such questions as the determination of costs of materials, labor and overhead, as well as the auditing of costs and expense analysis. The author is well known in British rubber circles and the book was originally written for the British industry but is equally applicable to accounting problems in the domestic rubber industry.

LA STAMPA PLASTICA E LE INDUSTRIA DELLA GOMMA. The Italian Plastics and Rubber Industries Year Book. Published by P. A. Pollini Pubblicita, Milan. February, 1932. 144 pp. $3.00.

The book is a directory of the Italian rubber and plastic trades with complete lists of manufacturers, wholesale and retail dealers and machinery and chemical suppliers to the industries. While published in Italian it contains a foreword in English with notes regarding the Italian plastic and rubber industries.

PLANTATION SHEET RUBBER MANUFACTURE. Planting Manual No. 3. Published by Rubber Research Institute of Malaya. Kuala Lumpur, F.M.S. February, 1932. 62 pp.

The manual has been prepared to give the latest information concerning improvements in rubber estate factory practice regarding the coagulation of latex, the handling of coagulum, and the machining, drying and smoking of sheet rubber. Technique in relation to estate factory practices is discussed in detail.

TWENTY-THIRD ANNUAL REPORT OF THE COUNCIL. Rubber Growers' Association. London. April, 1932. 50 pp.

Report of the activities of the Association during 1931, including a resume of the development and propaganda work of the organization committees. A statement of accounts and a list of members are also included.

SPREADING WORK. Methods and Plans in Use. Published by the President's Organization on Unemployment Relief. Government Printing Office, Washington, D. C. 1932. 28 pp.

The pamphlet contains a description of various plans promulgated by industrial concerns for spreading work opportunity by sharing the number of hours of labor with maximum number of employees possible to hold over the period of depression. Some companies have adopted temporary expedients such as shortening the working period, others have adopted permanently the 5-day week, while still others have set up more or less permanent procedures for spreading employment during all periods of slackened business activity. The plans of the B. F. Goodrich Company and the Goodyear Tire and Rubber Company are given in detail.

AMERICAN THERMOMETERS. Catalog No. 200. Published by the Consolidated Ashcroft Hancock Company, Bridgeport, Conn. March, 1932. 48 pp.

Booklet covers the latest models of thermometer equipment for industrial use, produced by the Consolidated Ashcroft Hancock Company. Whenever possible, these American thermometers have been standardized as to range and the length of the scale and stem.

HOYER-KREUTER TECHNICAL DICTIONARY. Sixth Edition. Three volumes; three languages; 2295 pp. Published in Germany; sole agent in the United States, The Industrial Press, 148 Lafayette St., New York City. Price, for the three volumes, $55; for two volumes, $37.50; for one volume, $19.50. 1932.

The Hoyer-Kreuter Technical Dictionary has been published in a new and enlarged edition including 100,000 carefully selected technical terms embracing various industries, arts, and sciences. This colossal work is in three large volumes: German-English-French; English-German-French; and French-German-English. Volume 1 has the German words alphabetically arranged, with definitions following in both English and French; Volume 2 has English entry words, with definitions in German and French; and Volume 3, French entry words. The technical elements of the three languages thus become interchangeable.

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